

with late stages (that is, supernovae and pulsars). Pylyser, de Loore, and Doom presented a short paper on the evolution of massive stars in the Magellanic Clouds that deals mainly with the dependence of the mass loss rate on metallicity. Chiosi *et al.* presented a paper on the evolution of intermediate-mass stars, which is an extension of Chiosi's earlier work on the role of convective overshoot in massive-star evolution.

The section on extragalactic star formation discusses, among other things, the importance of starbursts in galaxies like the Magellanic Clouds and the question whether star formation is mainly continuous and self-propagating or sporadic and triggered by external disturbances.

This is an interesting book, nicely arranged and easy to use. I think it would make a useful reference for anyone interested in star formation and the short but flashy lives of massive stars.

WENDEE M. BRUNISH  
*Los Alamos Scientific Laboratory,  
Los Alamos, NM 87545*

## Space Ventures in Britain

**History of British Space Science.** HARRIE MASSEY and M. O. ROBINS. Cambridge University Press, New York, 1986. xxii, 514 pp., illus. \$89.50.

Sir Harrie Massey, who died in November 1983, was an important contributor to British atomic and nuclear physics. He was heavily engaged in planning for physics in Britain subsequent to World War II and became an influential figure within the ministries that, among other activities, eventually made the upper atmosphere and near space accessible to British scientists during the International Geophysical Year and in the post-Sputnik years. M. O. Robins entered space science as Massey's scientific officer during the IGY to aid in the massive amount of liaison, policy, and detail work that fell upon Massey as he assumed the complex coordinating roles of chairman of the Gassiot Committee and various rocket and artificial satellite committees. Aware of the need to record what is an important aspect of British science, and with the support of the Science and Engineering Research Council, the two authors in 1981 undertook this survey of their own history.

The result of their effort is a valuable glimpse into how British space science evolved. We are given tantalizing vignettes of the development of the organizational network of scientists and officials within governmental ministries that led to a British capability in sounding rocket research dur-

ing the IGY and of how that ad hoc network of panels and boards transformed itself into permanent organizations that had to determine how Britain would participate in post-IGY research on satellites.

We are led all too briefly through this early development and transformation and learn about the necessary international cooperation in space research that British science fostered and at first tried to maintain. We are then thrust into detailed chapters on international cooperation through COSPAR and the European Space Research Organization and the difficulties of Commonwealth cooperation, particularly Massey's view (and therefore the British view) of the character and viability of the European Launcher Development Organization and the eventual transformation of ESRO and ELDO into the European Space Agency. The "British view" provided here is a sympathetic but provocative commentary on the problems of international cooperation. It is critical to note that there are many voices yet to be heard on this complex history, and the view presented here, though important, should not be considered definitive.

The chapters on international cooperation are interspersed with topical reviews of the further development of British sounding rockets (the Skylark) and satellites (the Ariel series) and of contributions by British space scientists organized by discipline. Supplementing the text are 100 pages of addenda and appendixes outlining experiments conducted on British and ESRO sounding rockets, organizational charts of the major British space science groups, reprints of published defining documents, outlines of scientific proposals, and memoranda of understanding.

The authors' vision of what is largely their own history no doubt will be digested with delight or some bitterness by many of their contemporaries and colleagues. For the historian it will be valuable, but it poses problems. Robins notes in a preface that he and Massey had access to "excellent documentation held in the archives of the Royal Society," yet there are no citations to archival material in the book. The accounts of important meetings, contracts, events, and processes could well have been derived from original documents but could just as well have come from memory. The historian who would hope to pursue the many lines of inquiry that a work such as this opens up must start almost from scratch. The authors' insights will be of use to historians who wish to understand this history fully, but their book is only a beginning.

DAVID H. DEVORKIN  
*National Air and Space Museum,  
Washington, DC 20560*

## Books Received

**Beyond Engineering.** Essays and Other Attempts to Figure Without Equations. Henry Petroski. Illustrations by Karen Petroski. St. Martin's, New York, 1986. xiv, 256 pp., illus. \$17.95.

**Biochemistry of Macrophages.** Pitman, London, 1986 (U.S. distributor, CIBA Pharmaceutical, Newark, NJ). x, 256 pp., illus. \$35. CIBA Foundation Symposium 118 (London, April 1985).

**The Biochemistry of the Polypeptide Hormones.** M. Wallis, S. L. Howell, and K. W. Taylor. Wiley-Interscience, New York, 1986. xiv, 488 pp., illus. \$69.95.

**The Biographical Dictionary of Scientists.** David Abbott, Ed. Bedrick, New York, 1986 (distributor, Harper and Row, New York). Engineers and Inventors. iv, 188 pp., illus. Mathematicians. viii, 175 pp., illus. Each vol., \$21.

**Biological Methylation and Drug Design.** Experimental and Clinical Role of S-Adenosylmethionine. Ronald T. Borchardt, Cyrus R. Creveling, and Per Magne Ueland, Eds. Humana, Clifton, NJ, 1986. xxii, 457 pp., illus. \$69.50. Experimental Biology and Medicine. From a symposium, Bergen, Norway, June 1985.

**Cutting Chemical Wastes.** What 29 Organic Chemical Plants are Doing to Reduce Hazardous Wastes. David J. Sarokin *et al.* INFORM, New York, 1985. xii, 535 pp., illus. Paper, \$47.50.

**Cycles of Soil.** Carbon, Nitrogen, Phosphorous, Sulfur, Micronutrients. F. J. Stevenson. Wiley-Interscience, New York, 1986. xx, 380 pp., illus. \$54.95.

**The Cytoskeleton.** An Introductory Survey. M. Schliwa. Springer-Verlag, New York, 1986. \$78. Cell Biology Monographs, vol. 13.

**Development of Order in the Visual System.** S. Robert Hilfer and Joel B. Sheffield, Eds. Springer-Verlag, New York, 1986. xii, 249 pp., illus. \$55. Cell and Developmental Biology of the Eye. From a symposium, Philadelphia, Oct. 1984.

**A Dictionary of Weights and Measures for the British Isles.** The Middle Ages to the Twentieth Century. Ronald Edward Zupko. American Philosophical Society, Philadelphia, 1985. xxxviii, 520 pp. \$30.

**Diet, Nutrition, and Cancer.** A Critical Evaluation. Vol. 2, Macronutrients, Nonnutritive Dietary Factors, and Cancer. Banduru S. Reddy and Leonard A. Cohen, Eds. CRC Press, Boca Raton, FL, 1986. viii, 181 pp., illus. \$70.50.

**Dioscorides on Pharmacy and Medicine.** John M. Riddle. University of Texas Press, Austin, 1986. xxx, 298 pp., illus. \$35. History of Science Series, no. 3.

**A Functional Biology of Marine Gastropods.** Roger N. Hughes. Johns Hopkins University Press, Baltimore, 1986. x, 245 pp., illus. \$32.50.

**Fundamentals of Hearing.** An Introduction. William A. Yost and Donald W. Nielsen. 2nd ed. Holt, Rinehart and Winston, New York, 1985. xii, 269 pp., illus. \$28.95.

**A Gardener Touched with Genius.** The Life of Luther Burbank. Peter Dreyer. 2nd ed. University of California Press, Berkeley, 1986. xiv, 294 pp., + plates. Paper, \$10.95.

**Gene Structure and Expression.** John D. Hawkins. Cambridge University Press, New York, 1985. xii, 173 pp., illus. \$34.50; paper, \$14.95.

**Genes, Proteins, and Cellular Aging.** Robin Holliday, Ed. Van Nostrand Reinhold, New York, 1986. xvi, 333 pp., illus. \$42.50. A Hutchinson Ross Publication. Benchmark Papers in Genetics Series, vol. 17.

**The Geology of Ore Deposits.** John M. Gilbert and Charles F. Park, Jr. Freeman, New York, 1986. xiv, 985 pp., illus. \$47.95. New ed. of *Ore Deposits*.

**Great and Desperate Cures.** The Rise and Decline of Psychosurgery and Other Radical Treatments for Mental Illness. Elliot S. Valenstein. Basic Books, New York, 1986. xiv, 338 pp., illus. \$19.95.

**Guide to Observing the Moon.** British Astronomical Association. Enslow, Hillsdale, NJ, 1986. 128 pp., illus. \$14.95.

**The Hartley Transform.** Ronald Bracewell. Clarendon (Oxford University Press), New York, 1986. vii, 160 pp., illus. \$24.95. Oxford Engineering Science Series, 19.

**Harvey Friedman's Research on the Foundations of Mathematics.** L. A. Harrington *et al.*, Eds. North-Holland, Amsterdam, 1985 (U.S. distributor, Elsevier, New York). xvi, 408 pp., illus. \$55.50. Studies in Logic and the Foundations of Mathematics, vol. 117.

**The Hidden Addiction.** And How to Get Free. Janice Keller Phelps and Alan E. Nourse. Little, Brown, Bos-

(Continued on page 375)

### Mass Monitor

The TEOM Series 1100 particulate mass monitor provides on-line measurement of mass with great sensitivity and accuracy. It features mass sensitivity of 10 billionths of a gram and the advantages of exchangeable filter cartridges. It can be used in situations in which particulates in gas streams must be detected and weighed. TEOM is derived from the patented Tapered Element Oscillating Microbalance, the most important component of which is a tapered, hollow tube in a protective enclosure. To measure particles in gas, this tapered element is set into oscillation by a feedback amplifier. A microprocessor constantly monitors the tube's frequency of oscillation. A vacuum pump, attached to the tube's base, draws the gas through a filter mounted on top of the tube. When particles become trapped in the filter, the increased mass changes the frequency of oscillation vibration, and the microprocessor computes the mass of the particles based on the frequency change. As additional particles collect on the filter, the monitor measures the incremental change. The TEOM system provides continuous mass measurement at flow rates ranging from 1 to 5 liters per minute. Data are collected as total mass, mass rate, or mass concentration. Rupprecht & Patashnick. Circle 549.

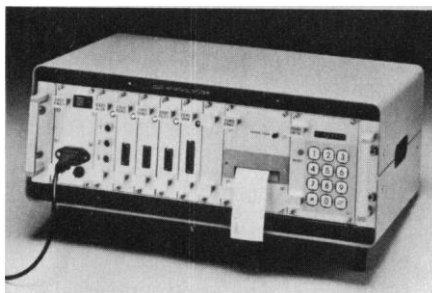
### Submicron Particle Analyzer

The Model N4 analyzer series comprises three instruments; Models N4S, N4SD, and N4MD. They measure the size of macromolecules, emulsions, and particles in suspension using photon correlation spectroscopy. The series includes such features as size analysis in 60 seconds, size distribution profiles, and automated multiple angle measurements. All three instruments provide average particle size over a range of 0.003 to 3  $\mu\text{m}$ , molecular weight, standard deviation, and diffusion coefficient of any suspension of particles or colloids; only the viscosity, temperature, and refractive index of the

suspending liquid need be known. Each spectrometer incorporates a 4-mW helium-neon laser, fiber optics detection, a temperature-controlled sample well (0° to 90°C), and an integral microprocessor that monitors instrument performance. The Model N4S is capable of reproducible measurements in only 60 seconds. Model N4SD analyzers are equipped with a size distribution processor that yields peak data and overall mean data of particle size-molecular weight distribution. Model N4MD offers all the features of the N4SD instrument plus a fiber optics module and support software to allow measurements at six different angles. Coulter Electronics. Circle 536.

### Computer Interface for Physiological and Behavioral Instruments

A modular interface system allowing up to 99 analog and/or digital physiological and behavioral monitoring instruments to connect to a computer or printer is now available. Instruments compatible with this interface system include analgesia meters,



constant speed, or accelerating Rota-Rod treadmills, plethysmometers (for detection and quantification of inflammation), shuttle avoidance systems, electronic activity monitors, and almost any instrument with a digital or analog output. The interface is via a serial RS-232C port and is thus compatible with most printers and computers available. Stoelting. Circle 551.

### Nonradioactive Nucleic Acid Detection

The BluGENE system detects single-copy genes of genomic DNA in Southern blots in less than 1 hour. The system uses a streptavidin-alkaline phosphatase conjugate to detect as little as 0.25 pg of DNA. Users of autoradiography and of other nonradioactive detection methods can realize the following advantages with BluGENE: researchers save hours of preparation time by using biotin-labeled probes—these probes

may be prepared just once and remain stable for at least 1 year; researchers achieve results faster with BluGENE—signal development is complete in just 3 hours, with single-copy genes visible in less than 1 hour; and researchers avoid the risk, expense, and complicated disposal measures of radioactive labeling. BRL Life Technologies. Circle 532.

### Scanning Electron Microscope

The SEM 525-M features a conical objective lens, in contrast to the normal flat end lens, which permits the user to keep a specimen close to the tip of the lens to ensure close working distance with even the largest specimen and high angles of tilt. The design of the lens maintains high imaging performance and efficient operation at acceleration voltages from 0.2 to 30 kV. The increased current density in the electron beam leads to more efficient analysis and image data generation. The SEM 525-M permits simultaneous operation of several detectors. All detection systems can see the point of observation on the specimen. The microscope has a motorized eucentric specimen stage that gives both a high degree of specimen manipulation and repositioning accuracy. The joystick ensures easy control of the stage with specimens up to 6 inches. With microprocessor storage and instant recall of up to 100 sets of specimen coordinates, the operator can rapidly return to any chosen location on the specimen. Philips Electronic Instruments. Circle 554.

### Literature

*Hollow-Fiber Membrane Technology* is devoted to ultrafiltration, microfiltration, and gas separation product lines. Applications and design specifications are included. A/G Technology. Circle 543.

*HPLC* describes the series 340 gradient, microgradient, and isocratic HPLC systems, pumps, components, and accessories. Beckman Instruments, Altex Division. Circle 544.

*Antisera and Related Products* catalogs a line of polyclonal and monoclonal antibodies, immunoenzymatic staining kits, control slides, and purified proteins. Dako. Circle 545.

*Chromogenic Substrates* features the Kabi-Vitrum line of chromogenic substrates used in the testing of coagulation proteins. Technical specifications accompany a reference table for selection of optimum substrate for a given application. Helena Laboratories. Circle 565.

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.

(Continued from page 373)

ton, 1986. xii, 250 pp. \$19.95; paper, \$9.95.

**Histoire de la Rage.** Cave Canem. Jean Théodorides. Masson, Paris, 1986. 290 pp., illus. Paper, F 200.

**Hope for a New Neurology.** Fernando Nottebohm, Ed. New York Academy of Sciences, New York, 1985. x, 238 pp., illus. Cloth or paper, \$50. Annals of the New York Academy of Sciences, vol. 457. From a conference, April 1984.

**Introductory Physics of the Atmosphere and Ocean.** L. Hasse and F. Dobson. Reidel, Dordrecht, 1986 (U.S. distributor, Kluwer, Hingham, MA). viii, 126 pp., illus. Flexicover, \$19.95. Augmented reprint of *Air-Sea Exchange of Gases and Particles*.

**Inventing Adolescence.** The Political Psychology of Everyday Schooling. Joseph Adelson. Transaction Books, New Brunswick, NJ, 1986. x, 296 pp. \$29.95.

**Invitation to Astronomy.** Simon and Jacqueline Mitton. Blackwell, New York, 1986. xi, 210 pp., illus. \$24.95; paper, \$8.95. Invitation Series.

**Ionic Currents in Development.** Richard Nuccitelli, Ed. Liss, New York, 1986. xxviii, 375 pp., illus. \$64. Progress in Clinical and Biological Research, vol. 210. From a meeting, Los Angeles, Aug. 1985.

**The Kangaroo Keepers.** H. J. Lavery, Ed. University of Queensland Press, New York, 1986. xxvi, 211 pp., illus., + plates. \$29.95.

**Language et Communication chez les Handicapés Mentaux.** Théorie, Evaluation et Intervention. Jean A. Rondal. Mardaga, Brussels, 1985. 320 pp., illus. BF 1.350. Psychologie et Sciences Humaines, no. 149.

**Language in Behavior.** Richard W. Howell and Harold J. Vetter. 2nd ed. Human Sciences, New York, 1985. 299 pp., illus. \$39.95; paper, \$19.95.

**Living Aloft.** Human Requirements for Extended Spaceflight. Mary M. Connors, Albert A. Harrison, and Faren R. Akins. National Aeronautics and Space Administration, Washington, DC, 1985 (available from Superintendent of Documents, Washington, DC). xii, 419 pp., illus. Paper, \$14. NASA SP-483.

**The Living Planet.** A Portrait of the Earth. David Attenborough. Little, Brown, Boston, 1986. 320 pp., illus. Paper, \$17.95.

**Log Analysis of Subsurface Geology.** Concepts and Computer Methods. John H. Doveton. Wiley-Interscience, New York, 1986. xiv, 273 pp., illus. \$37.95.

**The Long Darkness.** Psychological and Moral Perspectives on Nuclear Winter. Lester Grinspoon, Ed. Yale University Press, New Haven, CT, 1986. x, 213 pp., illus. \$25; paper, \$7.95. Yale Fastback, 31. Based on a symposium, Los Angeles, 1983.

**Macrophage Biology.** Sherwood Reichard and Mizu Kojima, Eds. Liss, New York, 1986. xviii, 965 pp., illus. \$120. Progress in Leukocyte Biology, vol. 4. From a congress, Ito, Japan, Sept. 1984.

**Malignant Tumors of Childhood.** Benjy Frances Brooks, Ed. University of Texas Press, Austin, 1986. xiv, 274 pp., illus. \$35. Robert E. Gross Lectureship Series. From a symposium, Houston, Texas, Feb. 1984.

**Management of High-Technology Research and Development.** John H. Dumbleton. Elsevier, New York, 1986. xvi, 399 pp., illus. \$89.

**Managing Global Issues.** Reasons for Encouragement. Club of Rome. Lahti Research and Training Centre, University of Helsinki, Helsinki, 1985. viii, 216 pp., illus. Paper, \$40. From a conference, Helsinki, July 1984.

**Marine Fauna and Flora of Bermuda.** A Systematic Guide to the Identification of Marine Organisms. Wolfgang Sterrer and Christiane Schoepfer-Sterrer, Eds. Wiley-Interscience, New York, 1986. xxxii, 742 pp., illus., + plates. \$99.95.

**Matrix Analysis.** Roger A. Horn and Charles R. Johnson. Cambridge University Press, New York, 1985. xiv, 561 pp., illus. \$37.50.

**Mechanisms of Adaptive Behavior.** Clark L. Hull's Theoretical Papers, with Commentary. Abram Amsel and Michael E. Rashotte. Columbia University Press, New York, 1984. xiv, 533 pp. \$40.

**Medical Biochemistry.** Principles and Experiments. John F. Van Pilsum and Robert J. Roon, Eds. University of Minnesota Press, Minneapolis, 1986. xii, 105 pp., illus. Paper, \$18.95.

**Neuropsychopharmacology of the Trace Amines.** Experimental and Clinical Aspects. A. A. Boulton et al., Eds. Humana, Clifton, NJ, 1986. xvi, 510 pp., illus. \$69.50. Experimental and Clinical Neuroscience. From a symposium, Germany, May 1985.

**Nitrogen and Energy Nutrition of Ruminants.** Ray L. Shirley. Academic Press, Orlando, FL, 1986. xiv, 358 pp., illus. \$55.50; paper, \$29.95. Animal Feeding and Nutrition.

**Nonconscious Social Information Processing.** Pawel Lewicki. Academic Press, Orlando, FL, 1986. xii, 237 pp., illus. \$39.50; paper, \$22.95.

**Nuclear Ethics.** Joseph S. Nye, Jr. Free Press, New York, 1986. xiv, 162 pp., illus. \$14.95.

**Numerical Methods in Fluid Dynamics.** Initial and Initial Boundary-Value Problems. Gary A. Sod. Cambridge University Press, New York, 1985. x, 446 pp., illus. \$44.50.

**Numerical Recipes.** The Art of Scientific Computing. William H. Press et al., Eds. Cambridge University Press, New York, 1986. xx, 818 pp., illus. \$39.50. Example Book (Fortran), viii, 179 pp. Paper, \$18.95. Example Book (Pascal), x, 236 pp. Paper, \$18.95.

**Play in Animals and Humans.** Peter K. Smith, Ed. Basil Blackwell, New York, 1986. xii, 334 pp., illus. Paper, \$14.95. Reprint, 1984 ed.

**Polyurethanes in Medicine.** Michael D. Lelah and Stuart L. Cooper. CRC Press, Boca Raton, FL, 1986. x, 225 pp., illus. \$89.

**Population Growth and Economic Development.** Policy Questions. Working Group on Population Growth and Economic Development, National Research Council. National Academy Press, Washington, DC, 1986. xii, 108 pp. Paper, \$10.

**The Predator-Prey Model.** Do We Live in a Volterra World? Manfred Peschel and Werner Mende. Akademie-Verlag, Berlin, 1986. xii, 251 pp., illus. DM48. Revised translation of the German edition (1983).

**Probabilistic Properties of Deterministic Systems.** Andrzej Lasota and Michael C. Mackey. Cambridge University Press, New York, 1985. x, 358 pp., illus. \$49.50.

**Proceedings of the Nineteenth European Marine Biology Symposium.** (Plymouth, U.K., Sept. 1984.) P. E. Gibbs et al., Eds. Cambridge University Press, New York, 1985. viii, 541 pp., illus. \$99.50.

**The Professoriate.** Occupation in Crisis. Higher Education Group, Ontario Institute for Studies in Education, Toronto, 1985. vi, 377 pp., illus. Paper, \$10. From a conference, Toronto, Oct. 1984.

**Studies of Shang Archaeology.** Selected Papers from the International Conference on Shang Civilization. (Honolulu, HI, Sept. 1982.) K. C. Chang, Ed. Yale University Press, New Haven, CT, 1986. xvi, 325 pp., illus. \$30. Early Chinese Civilization Series.

**Surficial Deposits of the United States.** Charles B. Hunt. Van Nostrand Reinhold, New York, 1986. x, 189 pp., illus., + loose map. \$39.95.

**Technology and the Future of U.S. Industry in World Competition.** James H. Gardner, Ed. White River Press, Indianapolis, 1985. x, 102 pp. Paper. The ITT Key Issues Lecture Series.

**Technology, Strategy and National Security.** Franklin D. Margiotta and Ralph Sanders, Eds. National Defense University Press, Washington, D. C., 1985 (available from the Superintendent of Documents, Washington, D.C.). x, 197 pp., illus. Paper, \$3.75.

**Temporal Dynamics of an Estuary.** San Francisco Bay. James E. Cloern and Frederic H. Nichols, Eds. Junk, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). viii, 237 pp., illus. \$67. Developments in Hydrobiology, 30. Reprinted from *Hydrobiologia*, vol. 129 (1985).

**A Textbook of Biological Feedback.** Mariella Fischer-Williams, Alfred J. Nigl, and Daniel L. Sovine. Human Sciences Press, New York, 1986. xii, 511 pp., illus. Paper, \$19.95. Augmented reprint, 1981 ed.

**Thioredoxin and Glutaredoxin Systems.** Structure and Formation. Arne Holmgren et al., Eds. Raven, New York, 1986. viii, 411 pp., illus. \$59.50. From a conference, Södergarn, Sweden, May 1985.

**Thirty Years That Shook Physics.** The Story of Quantum Theory. George Gamow. Dover, New York, 1985. xiv, 224 pp., illus., + plates. Paper, \$4.95. Reprint, 1966 ed.

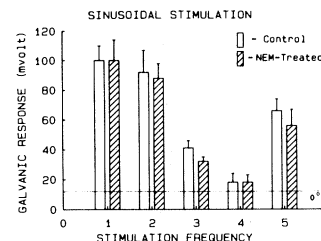
**Threatened Swallowtail Butterflies of the World.** The IUCN Red Data Book. N. Mark Collins and Michael G. Morris. Photographic plates by N. Mark Collins. International Union for Conservation of Nature and Natural Resources, Gland, Switzerland, 1985 (U.S. distributor, UNIPUB, Ann Arbor, MI). viii, 401 pp., illus., + plates. \$26.

**Traditional Agriculture in Southeast Asia.** A Human Ecology Perspective. Gerald G. Marten, Ed. Published in cooperation with the East-West Center Environment and Policy Institute, Honolulu, HI by Westview, Boulder, CO, 1986. xxvi, 358 pp., illus. \$36.50. From a working group, Honolulu, HI, Aug. 1982.

**Visual Cognition.** Steven Pinker, Ed. MIT Press, Cambridge, MA, 1985. x, 280 pp., illus. Paper, \$17.50. Computational Models of Cognition and Perception. A Bradford Book. Reprinted from *Cognition: International Journal of Cognitive Psychology*, vol. 18 (1984).

# **PUBLICATION** **QUALITY** **CHARTS AND** **GRAPHS**

from your IBM PC, XT, AT  
and HP or compatible plotter



**SIGMA PLOT™ software**

• Error Bars • Smooth lines,  
Clean diagonals • Movable  
Labels • Log and Semi-log scales  
• and more . . .

Load data from Keyboard or disk,  
any ASCII or DIF file (including  
LOTUS 123)

This and other new microcomputer  
tools for the scientist. Call or write  
for our FREE catalog.

**JANDEL SCIENTIFIC**

2656 Bridgeway, Sausalito, CA 94965

800-874-1888 (outside CA)

415-331-3022 (inside CA)

Circle No. 94 on Readers' Service Card

## **SCIENCE**

### **Posters**

The following posters of *Science*  
covers are available:

30 March 1979, Tropical flowering  
tree;

23 February 1983, Landsat photo  
of Detroit, Michigan;

29 July 1983, Cheetah;

2 December 1983, Snowshoe  
hare;

23 December 1983, Cathedral  
window/DNA molecule.

Combination of space covers in  
scroll format: 1 June 1979, 23 No-  
vember 1979, 10 April 1981.

Price is \$5 each (prepaid).

Write to AAAS, Department POST,  
1333 H Street, NW, Washington,  
D.C. 20005.

# Personnel Placement

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

## LINE CLASSIFIED ADVERTISING DEADLINES:

8 August issue (mailed 1 August): **18 July**  
15 August issue (mailed 8 August): **25 July**  
22 August issue (mailed 15 August): **1 August**  
29 August issue (mailed 22 August): **8 August**

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

**LINE DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth):** \$13.00 per millimeter; \$325 minimum, per week (minimum charge covers 25 millimeters on a single column; 25 millimeters equals 10 lines of 50 spaces per line). No charge for use of box number. No agency commission for ads less than 103 millimeters (4 inches). No cash discount. Prepayment required for all foreign ads. Purchase orders and billing address required for all other advertising.

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

**SCIENCE 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/Biotechnologist (M.S. Biotechnology):** Proficient in genetic engineering, applied enzymology, microbial biochemistry, and fermentation technology. Seeks research assistantships in industries and academe. Challenging researches welcomed, financial remuneration unessential. Box 136, SCIENCE. 7/18, 25; 8/1

**Biologist, Ph.D.** Three years of postdoctoral training. Experience in cell biology, protein purification, and receptor pharmacology. Extensive teaching experience. Seeks teaching and/or research position in academia/industry. Reply to: Box 128, SCIENCE. X

**Biomathematician does dynamical modeling** for you: Fluxes of temperature, molecules, cells, populations with differential equations, cellular automata. Send your problem for an estimation to: F. D. chez Brejnik, 34 gd Rue, F-01210, Ferry-Voltaire, Switzerland. X

**D.V.M., M.S., Ph.D.** Ten years of clinical practice. Graduate research in cancer (mice) and infectious diseases (fish). Interest in research concerning health and immunology of aquatic organisms. S. Wechsler, 4129 SW 31 Drive, Gainesville, FL 32608. 7/18, 25

**Researcher Biotechnology, M.S.** with industrial experience. Desires challenging position in industry or academia. Laboratory experiences include molecular biology, recombinant DNA, strain development, fermentation, radioisotopes, and separations techniques: LC, HPLC, agarose/polyacrylamide electrophoresis, and ultrafiltration. Designed, built, and operated supercritical extraction system. Box 129, SCIENCE. 7/18, 25; 8/1, 8/8, 15

## POSITIONS WANTED

**Toxicologist, Ph.D.** seeks challenging consulting, industrial, or academic position; 25 plus years of experience in research, program management, regulatory affairs, environmental litigation. Excellent communication skills; references available. Box 124, SCIENCE. X

**Virologist, Ph.D.** Program manager, director, antivirals research, virucidal efficacy. Seeks position change. Box 135, SCIENCE. X

## POSITIONS OPEN

The Department of Biology at the **University of Waterloo** invites applications for tenure-track appointments at the **ASSISTANT PROFESSOR** level in the following areas: (i) plant molecular biology—a molecular biologist with expertise in isolating and cloning genes of higher plants; (ii) nucleic acid biochemistry—a molecular biologist with expertise in gene sequencing, site-specific mutagenesis, and the synthesis of genes; (iii) bacterial genetics—a molecular geneticist with expertise in the genetic manipulation of secondary metabolism in bacteria. Candidates must have a Ph.D. and postdoctoral research experience and will be expected to establish a vigorous, independent research program. Send curriculum vitae, a description of future research plans, and names and addresses of three referees to: **Dr. R. G. H. Downer, Chairman, Department of Biology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.** Effective date of appointment is 1 October 1986. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

The Department of Biology at the **University of Waterloo** invites applications for a tenure-track appointment in Environmental Physiology/Ecology at the **ASSISTANT OR ASSOCIATE PROFESSOR** level. Preference will be given to applicants with an interest in biomonitoring packages, telemetric acquisition of both physiological and ecological data, and the future development of integrated, intelligent instrumentation for both field and laboratory use. Candidates must have a Ph.D. and postdoctoral research experience and will be expected to establish a vigorous, independent research program and to work closely with research groups in engineering and computer science. Send curriculum vitae, a description of future research plans, and names and addresses of three referees to: **Dr. R. G. H. Downer, Chairman, Department of Biology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.** Effective date of appointment is 1 October 1986. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

The Department of Biology at the **University of Waterloo** invites applications for a tenure-track appointment in protein biochemistry/molecular modeling at the **ASSISTANT OR ASSOCIATE PROFESSOR** level. Preference will be given to applicants with experience in pharmacology and receptor modeling and with an interest in invertebrate neuropharmacology or plant hormone receptor interactions. Candidates must have a Ph.D. and postdoctoral research experience and will be expected to establish a vigorous, independent research program. Send curriculum vitae, a description of future research plans, and names and addresses of three referees to: **Dr. R. G. H. Downer, Chairman, Department of Biology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.** Effective date of appointment is 1 October 1986. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

**ASSISTANT RESEARCH VIROLOGIST I** for research work on LAV/HTLV-III infections. M.D. degree required. Experienced in care of AIDS patients, performing studies including cell and virus culture; immunoassays and nucleic acid hybridization assays. Position available 1 October 1986 for at least 2 years. Salary is based on University of California pay scale. Submit résumé to: **Douglas Richman, M.D., Associate Professor in Residence, Department of Pathology V-111F Veterans Administration Medical Center, San Diego, CA 92161,** by 8 August 1986. *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**ASSISTANT or ASSOCIATE PROFESSOR—Ph.D. biochemist in connective tissue research.** This is a tenure-track position for head of the Biochemistry Section in the Orthopaedic Research Laboratory of Columbia-Presbyterian Medical Center. New laboratory space and significant funds for equipment are available. Highly competitive 12-month academic salary depends on experience and background. Candidate should be knowledgeable in advanced analytical biochemical techniques for quantification of collagen and/or proteoglycans of various soft connective tissues. Experience in use of scanning and/or transmission electron microscopes is desirable. The successful candidate will be encouraged to interact with the Department of Biochemistry in the Division of Health Sciences of Columbia University. A 1 January 1987 starting date is anticipated. Candidate should send, by 1 October 1986, curriculum vitae with three reference names to: **Dr. Van C. Mow, Director, Orthopaedic Research Laboratory, Columbia-Presbyterian Medical Center, Department of Orthopaedic Surgery, 622 West 168 Street, PH 5, Room 129, Columbia University, New York, NY 10032.** *Columbia University is an Equal Opportunity/Affirmative Employer.*

**POSTDOCTORAL FELLOW—Ph.D. APPLIED MECHANICS OR BIOMECHANICS.** This is a 1-year position for research in biomechanics of soft tissues and diarthrodial joints and bioengineering studies in joint prostheses in the new Orthopaedic Research Laboratory of Columbia University. Renewable second-year fellowship is possible. Fellowship stipend range \$24,000 to \$28,000, depending on experience. Candidate should be knowledgeable in theoretical and/or experimental applied mechanics, finite analysis, and some aspects of biomechanics. Interdisciplinary research project work is expected. A 1 September 1986, or 1 January 1987, starting date is anticipated. Interested candidates should send curriculum vitae with three reference names to: **Dr. Van C. Mow, Director, Orthopaedic Research Laboratory, Columbia-Presbyterian Medical Center, Department of Orthopaedic Surgery, 622 West 168 Street, PH 5, Room 129, Columbia University, New York, NY 10032.** *Columbia University is an Equal Opportunity/Affirmative Action Employer.*

**SENIOR RESEARCH ASSOCIATE—Ph.D. APPLIED MECHANICS OR BIOMECHANICS.** This is a 3-year position for research in biomechanics of soft tissues and diarthrodial joints and bioengineering studies in joint prostheses in the new Orthopaedic Research Laboratory of Columbia University. Salary is commensurate with an entry-level assistant professor in mechanical engineering. In addition, supplemental pay for 3 months in the summer is guaranteed for the duration of the appointment. Candidate should be knowledgeable in theoretical and/or experimental applied mechanics, finite element analysis, and some aspects of biomechanics. Independent and interdisciplinary research project work is expected. Upon the completion of the 3-year appointment, a joint tenure-track appointment between the Department of Orthopaedic Surgery and the Department of Mechanical Engineering may be established. A 1 September 1986 starting date is anticipated. Candidate should send curriculum vitae with three reference names to: **Dr. Van C. Mow, Director, Orthopaedic Research Laboratory, Columbia-Presbyterian Medical Center, Department of Orthopaedic Surgery, 622 West 168 Street, PH 5, Room 129, Columbia University, New York, NY 10032.** *Columbia University is an Equal Opportunity/Affirmative Employer.*

The Department of Biology at the **University of Waterloo** invites applications for **SENIOR SCIENTISTS** for an **NSERC/INDUSTRIAL CHAIR IN MICROBIAL BIOCHEMISTRY/PHYSIOLOGY** with Allelix as the industrial partner. The appointee will be expected to establish an active research program and to interact with strong molecular biology and fermentation engineering groups. The appointee will be a member of the Microbial Biotechnology Centre, part of a biotechnology consortium involving the Universities of Guelph and Waterloo. Generous start-up and research funding are available. Send a complete curriculum vitae, a statement of research interests, and the names and addresses of three referees to: **Dr. R. G. H. Downer, Chairman, Department of Biology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.** *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

## POSITIONS OPEN

### ASSISTANT ADJUNCT PROFESSOR OF SURGERY/ HEAD AND NECK SURGERY UNIVERSITY OF CALIFORNIA AT SAN DIEGO

**QUALIFICATIONS:** Ph.D. in biomechanics or related subspecialty and 3 years of laboratory research experience in biomedical engineering. Will assist Division of Head and Neck Surgery faculty with research on investigation of trauma mechanisms of occupants in automobile accidents, and will teach medical, graduate, and postgraduate students. Send curriculum vitae and inquiry to: **Dennis Schneider, Ph.D., Assistant Adjunct Professor of Surgery, M-014, University of California, San Diego, Gilman Drive and La Jolla Village Drive, La Jolla, CA 92093.** Salary: Per published scale. This is not a tenure-track position. Closing date is 15 August 1986. *University of California, San Diego is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT/ASSOCIATE PROFESSOR IN VIROLOGY.** The Department of Veterinary Science, University of Arizona, is seeking a highly qualified virologist with expertise in recombinant DNA techniques for a tenure-track position. The successful applicant is expected to develop a strong research program in an area of importance to bovine infectious diseases, such as bovine respiratory disease complex. A willingness to participate in interdisciplinary research projects and in graduate and undergraduate teaching is expected. The candidate must have a Ph.D. and postdoctoral experience. Position is available 1 January 1987, and applications will be accepted until 1 August 1986, or until position is filled. Interested persons should submit a complete curriculum vitae, including list of publications, and arrange to have copies of official transcripts and at least three letters of reference sent to: **Dr. Lynn A. Joens, Chairman of Search Committee, Department of Veterinary Science, University of Arizona, Tucson, AZ 85721.**

*The University of Arizona is an Equal Opportunity Employer.*

### HARVARD UNIVERSITY ASSISTANT PROFESSOR CELLULAR AND DEVELOPMENTAL BIOLOGY (CDB)

The Department of Cellular and Developmental Biology intends to make an appointment at the assistant professor level effective 1 July 1987. We are seeking outstanding candidates in the field of molecular and developmental neurobiology. *We encourage applications from women and minority groups.* Applications should include curriculum vitae, reprints of publications, and a statement of research plans. Complete applications and three letters of recommendation, solicited by the applicant, should be received no later than 1 October 1986. Late applications may be considered. Send all material to:

Diane Baldwin, Administrator  
CDB Search Committee  
Cellular and Developmental Biology  
The Biological Laboratories  
Harvard University  
16 Divinity Avenue  
Cambridge, MA 02138

*Harvard University is an Affirmative Action/Equal Opportunity Employer*

**ASSISTANT PROFESSOR, PLANT STRESS PHYSIOLOGY:** To focus on effects of stress in physiological processes at the tissue level with emphasis on significant stress factors for crops of the southern region. To collaborate with molecular biologists, cellular physiologists, whole-plant physiologists, and other plant scientists; to teach (approximately 15 percent) in the area of plant physiology; and to participate in the departmental graduate program. Available 15 September 1986 with application deadline of 15 August 1986, or until suitable applicant is identified. Submit curriculum vitae, transcripts, list of publications, and two recent reprints and have at least three letters of recommendation sent directly to: **Dr. John B. Baker, Chairman of Search Committee, Department of Plant Pathology and Crop Physiology, 302 Life Sciences Building, Louisiana State University, Baton Rouge, LA 70803.** *Louisiana Agricultural Experiment Station and Louisiana State University are Equal Opportunity/Affirmative Action Employers.*

## POSITIONS OPEN

### UNIVERSITY OF SASKATCHEWAN DEPARTMENT OF BIOCHEMISTRY ASSISTANT PROFESSOR

Two appointments at the level of assistant professor are available in the Department of Biochemistry, College of Medicine, University of Saskatchewan. These appointments are for terms of 3 years. Applicants must have a Ph.D. and/or M.D. degree. Duties will include research and teaching of biochemistry to undergraduate and graduate students. Effective date of the appointments is 1 July 1987. Salary will be commensurate with experience and training. Experience in areas such as gene manipulation and modern sequencing techniques would be an asset. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents.*

Please send curriculum vitae and the names of three references to: **Dr. J. D. Wood, Department of Biochemistry, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.** Reference Position numbers 86L 11-3-2X and 86L 11-3-3X.

**ASSISTANT PROFESSOR OF MICROBIOLOGY:** Seek individual whose primary undergraduate teaching responsibility includes general microbiology; will be expected to develop a strong research program and direct graduate students. Applicants should have a doctorate and appreciable postdoctoral research experience; area of research preference open. This is a full-time, tenure-track position beginning in 1987. The department is fairly large and well diversified. Send résumé, summary of research interests, and the names of four references to: **Dr. Irving P. Crawford, Chairman, Department of Microbiology, University of Iowa, Iowa City, IA 52242,** by 1 October 1986. *The University of Iowa is an Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSORS OF NATURAL SCIENCE

Michigan State University, Department of Natural Science, invites applications for two tenure-track positions at the assistant professor level to begin 1 January 1987. Positions involve teaching general education science courses to non-science majors. Applicants must have a Ph.D., evidence of scholarly activity, and a proven record of teaching. The department encourages applicants with teaching interests in the history/philosophy of science, or science-technology interactions, as well as in a traditional field. The successful applicant should be prepared to accept a joint appointment in another department. Candidates should submit a cover letter stating their specific teaching interests, a description of research goals, curriculum vitae, transcripts, and names of three references by 1 August 1986 to: **Dr. Patrick M. Muzzall, Search Committee, Department of Natural Science, 100 North Kedzie Laboratory, Michigan State University, East Lansing, Michigan 48824-1031.** *Michigan State University is an Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSOR PLANT CELL BIOLOGY

A 12-month, tenure-track position at the assistant professor level is available 1 January 1987 in the Section of Plant Biology, Division of Biological Sciences, Cornell University. Applicants should have research interests in plant cell biology. The appointee will be expected to maintain a strong research program and to teach an undergraduate level course in plant cell biology and an advanced course in the candidate's area of expertise. Candidates should have a Ph.D. in an appropriate area. Postdoctoral experience is highly desirable.

Applicants should submit a letter of application, a résumé of biographical data and professional experience, the names and addresses of at least three referees who have been asked to write letters of recommendation, and a brief plan of future research. Deadline for applications is 1 September 1986. Send materials to: **Dr. M. V. Parthasarathy, Section of Plant Biology, Plant Science Building, Cornell University, Ithaca, NY 14853;** telephone: 607-255-4477.

*Cornell University is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR OF MICROBIOLOGY

The Department of Botany and Microbiology at Oklahoma State University has reopened its search for a molecular microbiologist with expertise in **microbial physiology.** This is a new tenure-track position in microbiology and part of an expanding interdisciplinary program in **molecular genetics.** Postdoctoral experience is required utilizing modern molecular techniques. Candidates working with any type of microbial system are encouraged to apply. Competitive salary and start-up funds will be provided to help the appointee establish a fundable research program. Teaching responsibilities include an undergraduate course in microbial physiology and a graduate course in area of expertise. Starting date no later than January 1987. Send curriculum vitae, statement of research goals, transcripts, and names of three references by 1 September 1986 to: **Dr. Glenn Todd, Department of Botany and Microbiology, Oklahoma State University, Stillwater, OK 74078.** *An Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSOR—PHARMACOLOGY

The Pharmacology Department of Stanford University School of Medicine invites applications for a position at the assistant professor level. Applicants are expected to have a strong orientation to modern biochemistry and molecular biology and the application of these disciplines to pharmacological investigations. Send curriculum vitae, summary of research interests, and names of three references to: **Dr. Tag E. Mansour, Chairman, Department of Pharmacology, Stanford University School of Medicine, Stanford, CA 94305.** *Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.*

### DEPARTMENT OF BIOLOGY Assistant Professorships—Tenure-Track

The Department of Biology is seeking to strengthen and invigorate its teaching and research programs within the broad area of evolutionary studies. We are particularly interested in receiving applications from innovative and energetic candidates within the fields of molecular evolution, evolutionary ecology, higher plant biology, and marine biology. Actual specialization within the above fields is secondary to the quality of the candidate. Curriculum vitae, with the names of three referees, should be forwarded as soon as possible to: **Dr. Ian R. Ball, Professor and Head, Department of Biology, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3X9.** Applications close on 1 September, or when the positions are filled, whichever occurs earlier. *In accordance with Canadian immigration laws priority will be given to Canadian citizens and permanent residents.*

### ASSOCIATE RESEARCH INVESTIGATOR

Norden Laboratories, subsidiary of SmithKline Beckman Corp. and leader in the animal health industry, has an immediate opening in our Research and Development Division. As an important member of our biological research team, the investigator will be responsible for conducting a research program in the area of subunit vaccines, including isolation and identification of viral proteins, bacterial toxins, pili, and other virulence factors.

Applicants should have a Ph.D. in biochemistry or microbiology with postdoctoral specialization in protein chemistry. Experience with all types of separation and purification techniques is required. In addition, candidate must have working knowledge of microbiology, a broad knowledge of immunology, and be familiar with monoclonal antibody technology.

Norden Laboratories offers an attractive starting salary, as well as a comprehensive benefit package that is one of the finest in the industry. Interested applicants should send a résumé (including salary requirements) in confidence to:

Norden Laboratories, Inc.  
Steven M. Eichler, Manager, Employee Relations  
P.O. Box 80809  
Lincoln, NE 68501

*An Equal Opportunity/Affirmative Action Employer*

# CONGRESS ON RESEARCH IN LYMPHOKINES AND OTHER CYTOKINES BASIC BIOLOGY AND STRATEGIES FOR CLINICAL APPLICATION

AUGUST 10-13, 1986

BOSTON MARRIOTT COPLEY PLACE, BOSTON

Organized by

Mary Ann Liebert, Inc. and Scherago Associates, Inc.

This meeting will focus mainly on interleukins, interferons, and cytotoxic cytokines, highlighting their potential importance in human disease. This meeting is timely because many of these agents are available in pure form as a result of advances in conventional protein purifications and molecular biologic techniques. An attempt will be made to integrate studies of the mechanism of actions of these agents and their application in the treatment of disease.

The symposium will take place Monday and Tuesday from 8:30 am – 6:00 pm and Wednesday until 12 noon. Discussion groups based on poster sessions will be held Monday and Tuesday evenings. Table top exhibits will also be presented.

## CO-CHAIRMEN

*Stanley Cohen*, Professor of Pathology, University of Connecticut Health Center, Farmington

*Jan T. Vilcek*, Professor of Microbiology, New York University Medical Center, New York

## TENTATIVE PROGRAM

### SUNDAY EVENING, AUGUST 10

#### KEYNOTE ADDRESS: MECHANISMS OF CELL PROLIFERATION

Speaker: *Renato Baserga*

### MONDAY, AUGUST 11

#### TUMOR NECROSIS FACTOR AND OTHER CYTOTOXIC MEDIATORS

Chairman: *P. Henkart*

Comparison of TNF and Lymphotoxin: *B.B. Aggarwal*

Cachetin: *B. Beutler*

Interplay of TNS, IL 1, and Interferons in Monocytes Cytotoxicity:

*Lois B. Epstein, M.D.*

Soluble Factors in Cell-Mediated Cytotoxicity: *P. Henkart*

Regulation of Hematopoietic Cells by Cytotoxins: *G. Trinchieri*

#### INTERFERONS AS REGULATORY AGENTS

Chairman: *M. Revel*

Regulation of Interferon Gene Expression: *John D. Stobo, M.D.,  
John Hopkins University*

Beta<sub>2</sub> Interferon: *M. Revel*

Growth Factors as Interferon Inducers: *J. Vilcek*

Interferon Receptors: *S. Pestka*

Regulations of Oncogenes Expression by Interferons:

*R.M. Friedman*

### TUESDAY, AUGUST 12

#### INTERLEUKIN 2 AND OTHER GROWTH FACTORS

Chairman: *T.A. Waldmann*

The Nature of IL 2 Receptor: *T.A. Waldmann*

IL 2 Ligand-Receptor Interactions: *K.A. Smith*

Intracellular Transduction Pathways in IL 2 Stimulation: *S. Cohen*

Protein Kinase C in IL 2 Action: *W.L. Farrar*

B Cell Growth Factor: *A.L. Maizel*

#### INTERLEUKIN 1, COLONY STIMULATING FACTORS

Chairman: *C.A. Dinarello*

Structural Studies of IL 1: *C.A. Dinarello*

The Role of IL 1 in the Central Nervous System:

*L.B. Lachman*

IL 1 and Rheumatoid Arthritis: *E. Amento*

Biologic Effects of Colony Stimulating Factors: *M. Moore*

### WEDNESDAY MORNING, AUGUST 13

#### POTENTIAL CLINICAL APPLICATIONS

Chairman: *C.F. Nathan*

LAK and IL 2 in Cancer Therapy: *M.T. Lotze*

Adoptive Transfer of Interferon-Activated Macrophages:

*H.C. Stevenson*

Interferon in Malaria: *Victor Nussenzweig, M.D.,*

Inhibition of Intracellular Micro-organism by Cytokines:

*Christine W. Czarniecki*

Gamma Interferon in Leprosy and AIDS: *C.F. Nathan*

CONCLUDING REMARKS: *S. Cohen, J. Vilcek*

#### REGISTRATION FORM

\$350 – Pre-Registration Fee (Received by July 1, 1986)

\$400 – On-Site Fee

\$175 – Student fee, undergraduates & graduates only (status must be confirmed in writing)

Attendance will be limited. Make checks payable to: Scherago Assoc., Inc., L & C Congress

Please reserve \_\_\_\_\_ space(s): Registration Fee must be included.

☐ Request Poster Session Abstract Form

Cancellations must be received in writing by July 1, 1986.

Name \_\_\_\_\_

Dept. \_\_\_\_\_

Organization \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone: ( ) \_\_\_\_\_

Return to: **CONGRESS ON RESEARCH IN LYMPHOKINES AND CYTOKINES**

c/o Scherago Associates, Inc.

1515 Broadway, New York, NY 10036 • (212) 730-1050

S-7-18

## SOUTHEASTERN UNIVERSITIES RESEARCH ASSOCIATION

### PRESIDENT

SURA invites nominations and applications for the position of President of the Association. The President is the chief executive officer and reports directly to the Board of Trustees.

SURA is a consortium of 35 universities in the southeast and is dedicated to planning and managing research facilities which are not appropriate for a single university. At present, SURA is involved in two major enterprises, CEBAF, the Continuous Electron Beam Accelerator Facility in Newport News, Virginia and SURANet, an NSF supported computer network for southeastern universities.

The duties of the President include general oversight of the activities of CEBAF and SURANet, negotiation with federal agencies for funding and execution of contracts. At present, about 80% of the President's time is spent in support of CEBAF. The President also represents the interests of SURA to the several constituencies in Washington and elsewhere. The President is expected to provide leadership in discussions of new projects which might be appropriate for SURA sponsorship.

The offices of SURA are in Washington, D.C. The desired starting date is January 1, 1987 or as soon thereafter as possible. Salary is negotiable.

The President of SURA should:

1. Be a scientist or engineer with a distinguished record of accomplishments.
2. Have significant experience in the management of major scientific research projects in universities or national laboratories.
3. Have extensive experience in dealing with funding agencies and the federal scientific advisory machinery.
4. Have a demonstrated record of experience with and understanding of American universities.

Applications will be received until a suitable candidate is identified. Please send nominations or applications with a complete CV, a statement of interest, and the names and addresses of three references to:

**Dr. George W. Wheeler, Chairman of the Board**  
c/o Office of the Provost  
The University of Tennessee  
517 Andy Holt Tower  
Knoxville, TN 37996

*EEO/Title IX/Section 504 Statement*

## BS/MS MOLECULAR BIOLOGISTS

THE LILLY RESEARCH LABORATORIES, a division of Eli Lilly and Company, is seeking applicants for positions in our division of Molecular and Cell Biology. The laboratories are located in a new state-of-the-art research facility at the Lilly Corporate Center.

### Associate Molecular Biologist

These positions require a Bachelors degree with at least two years experience or a Masters degree in Molecular Biology. Applicants must be familiar with techniques such as DNA sequencing, molecular cloning, restriction mapping, cDNA preparation, Southern blotting.

Qualified candidates should send their resume to:

Robert F. Dowden  
Sr. Personnel  
Representative (AMB)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285



An Equal Opportunity Employer M/F

## PATHOLOGIST

Ayerst Research has a vacancy for a Veterinary Pathologist to work at the toxicology laboratory in Chazy, New York. The incumbent will assist in the design and review of protocols for studies, supervise necropsy technicians, perform necropsies, conduct histopathologic examinations and evaluations and write pathology reports. Applicants should possess DVM, PhD or MD degree with experience in veterinary pathology. Board certification (or eligibility) and experience in toxicologic pathology are desirable but not essential.

Our facility is located in the scenic Adirondack Mountain, Lake Champlain region of New York State, within a short drive to Montreal and the Lake Placid Olympic area. We offer a competitive starting salary with a full line of benefits including dental, prescription, relocation and interviewing expenses.

Send resume and salary history with requirements to:

**Gary D. Wagoner, Personnel Manager**

**Ayerst**

**AYERST  
LABORATORIES INC.**  
Rouses Point, New York 12979

Equal Opportunity Employer M/F/H

## Postdoctoral Scientist Growth Factor

The Department of Cell Biology at Smith Kline & French Laboratories, located in suburban Philadelphia, Pennsylvania, is seeking a Postdoctoral Scientist interested in the role of peptide growth factors and tumor inhibitory factors to join a multidisciplinary team seeking novel therapeutic agents for the treatment of human colon cancer. Our postdoctoral appointments are normally of 2 years duration.

The successful candidate will:

- identify, isolate and characterize biomolecules that influence the proliferation and differentiation of normal and neoplastic human colon epithelial cells.
- conduct purification of polypeptide growth factors and perform structural and functional characterizations of these molecules.
- identify and characterize tumor inhibitory factors of human colon adenocarcinoma cells.

Candidates are required to have:

- a Ph.D. in Biochemistry, Cell Biology or related discipline.
- 0-3 years postdoctoral research experience.
- proven research ability in protein purification and clear and concise communication skills.

We offer a stimulating research environment, excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your resume and three letters of reference to: George P. Kissell, Jr., Manager, Personnel Relations, 1562 Spring Garden Street, Philadelphia, PA 19101. We are an Equal Opportunity Employer, M/F/H/V.

**SK&F**  
A SmithKline Beckman Company

## POSITIONS OPEN

**ASSISTANT SCIENTIST.** Position available immediately for B.S. or M.S. candidate in microbiology or the equivalent with at least 1 to 2 years of working experience in molecular biology and recombinant DNA technology. Research experience in M13 sequencing and in vitro mutagenesis is highly desirable. Send résumé to: **Crop Genetics International, 7170 Standard Drive, Hanover, MD 21076.** CGI is an innovative agricultural biotechnology company located in the Washington/Baltimore corridor.

**CORNELL UNIVERSITY** invites applications and nominations for **ASSOCIATE DIRECTOR, CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION (CUAES), ITHACA, NEW YORK/ASSOCIATE DIRECTOR FOR RESEARCH OF THE COLLEGE OF AGRICULTURE AND LIFE SCIENCES, ITHACA, NEW YORK.** The associate director shares responsibility for administration of the research programs of CAES and coordination of research in the College of Agriculture and Life Sciences. Qualifications: (i) an earned doctorate in agricultural or life sciences or rural social sciences discipline, (ii) record of research accomplishment sufficient for a tenured professorial appointment in an appropriate department, (iii) experience and accomplishment in rural and economic sciences is preferred. Nominations and applications, including a résumé of professional experience and qualifications, and names and addresses of three references will be received until 1 September 1986. Applications should be addressed to: **N. R. Scott, Director for Research, CALS, Cornell University, 292 Roberts Hall, Ithaca, New York, 14853.**

*An Affirmative Action/Equal Opportunity Employer*

### ASSOCIATE PROFESSOR— WATER CHEMISTRY

To develop graduate research and training program relating to chemical contamination of water and its control, including hazardous wastes. Tenure-track. Send curriculum vitae to: **Dr. Morton Corn, Department of Environmental Health Sciences, School of Hygiene and Public Health, The Johns Hopkins University, 615 North Wolfe Street, Baltimore, MD 21205.**

**ASSOCIATE RESEARCH VIROLOGIST I:** Ph.D. with expertise in cell and virus culture, cell-mediated immunology, and molecular genetics to conduct research in AIDS pathogenesis. Position available 15 September 1986 for at least 2 years. Salary range is based on University of California pay scale. Submit résumé to: **Douglas Richman, M.D., Associate Professor in Residence, Department of Pathology V-111F Veterans Administration Medical Center, San Diego, CA 92161, by 8 August 1986.** *Affirmative Action/Equal Opportunity Employer.*

**BIOCHEMIST/MOLECULAR BIOLOGIST** to work with **Dr. Beverly Paigen** examining molecular basis of genes to determine atherosclerosis susceptibility in the mouse. Experience in lipoprotein or lipid metabolism desirable. Appointment at postdoctoral (\$20,500 to \$22,800 annualized) or assistant scientist (\$27,900 annualized) level, depending on qualifications. Send résumé with references to: **Ruth Robinson, Director, Employment Services, CHILDREN'S HOSPITAL, 747 52nd Street, Oakland, CA 94609.**

*Equal Opportunity Employer*

**DIRECTOR ENVIRONMENTAL CHEMISTRY.** Performance supplier of environmental toxicology and chemistry service has immediate opening for research analyst with supervisory experience. Technical qualifications include experience with a variety of instrumentation (GC, GC/MS, HPLC, AAS, LSC) and laboratory procedures for conducting chemical fate tests (hydrolysis, photolysis, metabolism, transport). Individual will be responsible for directing a staff of 10 to 12 analysts, scheduling and coordinating projects, data analysis and reporting, and assisting in new business development. Advanced degree (Ph.D.) preferred with 2 to 5 years of progressive laboratory experience. Familiarity with computerized data management system (IBM-PC) a plus. Send résumé and salary history to: **Springborn Biomomies, Inc., attention: D. Scott, 790 Main Street, Wareham, Massachusetts 02571.**

## POSITIONS OPEN

### BIOSTATISTICS DIRECTOR

Biostatistics director—Ph.D. level director sought to supervise biostatistics activities and staff of 15 at the City of Hope Cancer Research Center, including all clinical trials development, data collection, and study evaluation for this NCI-funded Cancer Center. Respond with curriculum vitae and three letters of reference to: **Dr. James Doroshow, Department of Medical Oncology, City of Hope National Medical Center, 1500 East Duarte Road, Duarte, CA 91010.** *City of Hope is an Equal Opportunity Employer.*

### CHAIRMAN, DEPARTMENT OF BIOCHEMISTRY

The Georgetown University Medical Center invites applications and nominations for the position of chairman, Department of Biochemistry. The department is responsible for teaching general biochemistry to the medical and dental school of students and offers an in-depth graduate program. In addition, the chairman participates extensively in administrative activities in the medical center. Candidates must have a distinguished record of scholarly academic and research achievements and teaching and administrative experience. A strong capability for leadership is required. The position requires a major commitment to the development and administration of the departmental research and teaching programs. Applicants should send a letter of application summarizing their academic experience and research expertise, curriculum vitae, and have three letters of recommendation forwarded to: **Dr. Gary R. Pearson, Search Committee Chairman, Department of Microbiology, Georgetown University Medical Center, Washington, DC 20007.** Applications must be received by 1 October 1986.

**CHAIRMANSHIP,** Department of Human Genetics, Medical School, University of Michigan.

The University of Michigan Medical School invites applications for the chairmanship of its Department of Human Genetics. Qualifications must include: national stature as a leader in research in the field of genetics, demonstrated commitment to excellence in teaching, and interest in administration. An interest in molecular genetics is desirable. Respond to: **M. J. Coon, Ph.D., Chairman, Human Genetics Search Committee, University of Michigan Medical School, Department of Biological Chemistry, Room 5416 Medical Science I, 1301 Catherine Road, Ann Arbor, Michigan 48109-0606.** *A nondiscriminatory, Affirmative Action Employer.*

### CLINICAL CYTOGENETICIST LABORATORY DIRECTOR

Norwalk Hospital, a 427-bed Yale-affiliated community hospital, seeks a clinical cytogeneticist/laboratory director to develop a new service in support of an active prenatal diagnostic service with current caseload of 400 to 500 specimens per year.

The ideal candidate will possess a Ph.D. and Board certification by the American Board of Medical Genetics. Background in amniotic fluid specimens, bone marrow, peripheral blood, and tissue specimens using all routine banding techniques essential.

We offer an excellent salary and benefit package. Qualified applicants should submit curriculum vitae to:

**Hollis Truax, M.D.**  
Department of Pathology  
Norwalk Hospital  
Maple Street  
Norwalk, Connecticut 06856

### CLINICAL NEUROPHYSIOLOGIST

Applicants sought for a tenure-track position at the level of **assistant or associate professor.** Candidates should have a Ph.D. in neurophysiology or a related discipline, and demonstrated experience in human evoked potential and EEG research. Basic neurophysiology expertise desirable. Send curriculum vitae and names of three references to: **John Straumanis, M.D., Professor and Chair, Department of Psychiatry, Louisiana State University Medical Center, P.O. Box 33932, Shreveport, LA 71130.**

*Affirmative Action/Equal Opportunity Employer*

## POSITIONS OPEN

**CORAL INDUSTRIES FELLOW:** Ph.D. in chemical engineering, chemistry, or a related discipline with expertise in biomass gasification, pyrolysis, or conversion of methane to methanol. Will assist the Coral Industries Chair and Hawaii Natural Energy Institute (HNEI) in the development of biofuels technologies, including methanol production and charcoal manufacture. A 3-year appointment in HNEI with the possibility of renewal and tenure-track status is anticipated. Salary commensurate with experience; minimum \$36,000 per year. Send curriculum vitae with names and addresses of three references to: **Professor M. J. Antal, Coral Industries Chair, Hawaii Natural Energy Institute, University of Hawaii, 2540 Dole Street, Honolulu, HI 96822; telephone: 808-948-7267.** *An Equal Opportunity Employer.*

### CURATORIAL POSITION IN MAMMALOLOGY

Curricula vitae are being solicited for a curatorial position in mammalogy at the Natural History Museum of Los Angeles County. Responsibilities consist of sharing in curation of a major collection, in particular, the large mammals; use of the collection in research on systematics of mammals, with emphasis on marine forms; and participation in the museum's public programs. Ph.D. required; salary is commensurate with experience. Send letter of interest, curriculum vitae, and names of three references before 1 September 1986 to: **Dr. Ralph W. Schreiber, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007; telephone: 213-744-3366.** *LACM is an Equal Opportunity Employer.*

**DIRECTOR FOR HUMAN GENETICS, MAGEE WOMEN'S HOSPITAL AND UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE.** We are seeking a person to develop a program in human genetics with emphasis on cellular and molecular genetics and to provide clinical genetic services to a large health center. The person should have an M.D. and a broad range of experience. Those interested in applying should send their curriculum vitae and the names and addresses of three references to: **Thomas J. Gill III, M.D., Chairman of the Genetics Search Committee, Department of Pathology, University of Pittsburgh School of Medicine, Pittsburgh, PA 15261.** Application deadline date is 1 August 1986. *The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer.*

### DIRECTOR OF MEDICAL PHYSICS

The Department of Radiation Oncology of Columbia University College of Physicians and Surgeons is seeking candidates for the director of medical physics. Responsibilities include: Direction of the Clinical Physics Program, Quality Assurance Program, as well as involvement in applied and basic research. Send curriculum vitae to: **James D. Cox, M.D., Department of Radiation Oncology, 622 West 168 Street, Babies Hospital Basement, Room 7, New York, NY 10032-3784.** *Columbia University is an Affirmative Action/Equal Opportunity Employer.*

**ECOLOGIST** needed to teach ornithology fall 1986 and ornithology or behavioral ecology in spring term and a one-unit seminar each term. One-half time position. Salary \$10,000 to \$14,000 for 9 months. Ph.D. or near completion in appropriate field required. Start 25 August 1986. Send résumé and have three reference letters sent by 30 July 1986 to: **Dean R. L. Ridenhour, College of Natural Resources, Humboldt State University, Arcata, CA 95521; telephone: 707-826-3561.** *An Equal Opportunity Employer.*

**ENTOMOLOGIST** to conduct studies on microbial control of insects feeding on food crops. This research position is available immediately at the assistant scientist level. The Ph.D. is required. Salary is \$31,016. Please submit applications, consisting of undergraduate and graduate transcripts, a list of three references, curriculum vitae, reprints of publications, summary of Ph.D. thesis, and a statement of research interests to: **Dr. John F. Anderson, Head, Department of Entomology, The Connecticut Agricultural Experiment Station, P.O. Box 1106, New Haven, Connecticut 06504.**

*An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**DEPARTMENT OF MICROBIOLOGY**, School of Medicine, University of Missouri—Columbia, invites applications for new tenure-track faculty positions; salary and rank open depending on qualifications and experience. These positions represent the university's newly funded major commitment to the development of eminence in a **multi-disciplinary campus-wide molecular biology program**. The successful candidates are expected to conduct outstanding, independent research which will complement and supplement multiple existing funded programs in prokaryotic and eukaryotic molecular genetics, pathogenesis, immunobiology, and molecular parasitology in a heavily research-oriented department and to participate in education of graduate and medical students. Experience and interest in lower eukaryotes, human genetics, protein/nucleic acid structure, and molecular immunology preferred. Send curriculum vitae, names of three references, and brief statement of research interests by 30 September 1986 to: **Richard A. Finkelstein, Ph.D., Millsap Distinguished Professor and Chairman, Department of Microbiology, School of Medicine, University of Missouri—Columbia, MO 65212.** *The University of Missouri is an Equal Opportunity and Affirmative Action Institution.*

**EM LABORATORY TECHNICIAN:** Position available for person experienced in conventional TEM and SEM techniques. Skill in ultramicrotomy essential. Send résumé and names of three references to: **Dr. Greta E. Tyson, Electron Microscope Center, Drawer EM, Mississippi State University, Mississippi State, MS 39762; telephone: 601-325-3017.**

*Mississippi State University is an Equal Opportunity/Affirmative Action Employer.*

### FACULTY POSITION IN MEDICINAL AND NATURAL PRODUCTS CHEMISTRY COLLEGE OF PHARMACY THE UNIVERSITY OF IOWA

The Division of Medicinal and Natural Products Chemistry of the College of Pharmacy of the University of Iowa invites applications for a tenure-track faculty position in medicinal and natural products chemistry. Responsibilities will include participation in undergraduate and graduate instruction; establishment, development, and maintenance of a vigorous externally funded research program; and direction of graduate students and (when appropriate) postdoctoral associates, as well as participation in collegiate and university committee activities and other faculty governance-related matters. Candidates should hold the Ph.D. in medicinal chemistry or a closely related area of chemistry. Preference will be given to candidates with research/teaching interests and expertise in synthetic organic chemistry, drug design, and structure-activity relationship studies. Candidates with postdoctoral experience are preferred. The position is available no later than 1 July 1987. Applicants should submit a current curriculum vitae, a narrative statement describing research and teaching interests and objectives, and the names, addresses, and telephone numbers of three references. Candidates submitting application materials by 1 August 1986 will be given preference. Address all correspondence, inquiries, and application materials to:

**Professor Joseph G. Cannon, Head  
Division of Medicinal and Natural  
Products Chemistry, College of Pharmacy  
The University of Iowa  
Iowa City, Iowa 52242**

*The University of Iowa is an Equal Opportunity/Affirmative Action Employer, and encourages applications from women and minority groups.*

### FACULTY VACANCIES

Tenure-track positions available in Divisions of Biochemistry, Cell Biology, and Human Genetics for applicants with outstanding research programs or potential. Rank commensurate with training and experience. Of particular interest are molecular genetics, hormone regulation, developmental/cell biology, protein and lipid biochemistry, growth regulation, transcription in vitro, cardiovascular biochemistry, and neurochemistry. Direct inquiries, including curriculum vitae by 1 August to: **Dr. E. Brad Thompson, Chairman, Departments of Human Biological Chemistry and Genetics, University of Texas Medical Branch, Galveston, TX 77550.** *An Equal Opportunity/Affirmative Action Employer.*

## CSIRO

### RESEARCH FELLOW MOLECULAR BIOLOGIST

**A\$27,475–A\$33,901**

### DIVISION OF TROPICAL ANIMAL SCIENCE LONG POCKET LABORATORIES INDOOROOPIILLY QLD AUSTRALIA

**GENERAL:** The Division of Tropical Animal Science undertakes research activities on the improvement of animal health and production, particularly cattle production, in tropical Australia. It has programs on breeding and management, disease and parasite control and nutrition.

A major area of research being conducted at the Division's Long Pocket Laboratories is the development of experimental vaccines against diseases. The Division has groups undertaking immunological, biochemical and molecular biology studies of the antigens of disease agents. A number of molecular biologists are being appointed to assist these studies.

One of the Division's current programs is aimed at alleviating the potentially fatal toxicosis, tick paralysis, caused by the Australian paralysis tick *Ixodes holocyclus* in domestic livestock and pets. This program has reached the stage where the feasibility of vaccinating animals against the crude toxin has been demonstrated and antigen purification and characterisation is well advanced.

**DUTIES:** To undertake collaborative research work to produce the *Ixodes holocyclus* antigen molecule in whole or part by recombinant DNA methods.

**QUALIFICATIONS:** A PhD degree or equivalent qualifications in the field of recombinant DNA technology, with some experience in protein chemistry.

**TENURE:** A term of three years with Australian Government superannuation benefits available.

**APPLICATIONS:** Stating relevant personal particulars, including details of qualifications and experience, the names of at least two professional referees and quoting reference No M7800, should be directed to:

**The Chief  
CSIRO Division of Tropical Animal Science  
Private Bag No 3  
INDOOROOPIILLY QLD 4068**

By August 15, 1986.

*CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER*

## CARDIOVASCULAR PHARMACOLOGIST/BIOCHEMIST

### *Cellular Mechanisms Research*

The Pharmaceutical Research Division of Warner-Lambert/Parke Davis has an immediate opening for a senior scientist in hypertension research. The successful candidate will lead a group of scientists in the development, evaluation and recommendation of strategies for the discovery of novel antihypertensive agents.

Qualified applicants will possess the following:

- Ph.D. or equivalent in pharmacology or related discipline with strong biochemical orientation.
- 3-5 years postdoctoral research experience at the cellular level in vascular smooth muscle or endothelium. Desired, though not essential, experience would include familiarity with calcium movements, phosphatidylinositol metabolism and/or protein phosphorylation.
- Excellent oral and written communication skills, including a documented record of scientific achievement as evidenced by publications.

We offer excellent compensation and benefits at our modern facilities adjacent to the University of Michigan campus. Interested, qualified candidates should forward curriculum vitae and salary requirements to: **Ms. D. Love, Human Resources Supervisor, WARNER-LAMBERT/PARKE DAVIS, 2800 Plymouth Road, Ann Arbor, Michigan 48105.**

# WARNER LAMBERT

*An Equal Opportunity Employer M/F/H*

## POSITIONS OPEN

### UNIVERSITY OF GUELPH Embryologist/Developmental Anatomist Department of Biomedical Sciences Ontario Veterinary College

Applications are invited for a probationary (tenure-track) assistant or associate professorship in embryology/developmental anatomy available 1 January 1987. Major teaching responsibilities will be veterinary embryology in the D.V.M. program with lesser duties in histology. The successful candidate will be expected to conduct independent research in an aspect of early development applicable to food-producing animals. Participation in graduate education will also be expected. Applicants must have a Ph.D. (or equivalent). A D.V.M. degree with experience or interest in an applied area of veterinary medicine would be desirable.

The salary is negotiable and subject to final budgetary approval. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

Applications with curriculum vitae and names of three referees should be directed to: **The Chairman, Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.**

Closing date 15 October 1986, or until filled.

### FACULTY POSITION IN PATHOLOGY

The Department of Pathology at the University of Virginia School of Medicine has an opening at the **assistant or associate professor level** for an academic pathologist with a strong background in an area of modern experimental pathology such as molecular biology or membrane biology. It would be an advantage for the candidate to have clinical training in anatomic or clinical pathology. Send curriculum vitae, plus names and addresses of three references to: **Thomas W. Tillack, M.D., Chairman, Department of Pathology, Box 214, University of Virginia Medical Center, Charlottesville, VA 22908. An Equal Opportunity/Affirmative Action Employer.**

**IMMUNOLOGIST.** The Biology Department invites applications for a tenure-track **ASSISTANT PROFESSOR** position. The appointee is expected to develop a strong independent research program in immunology and to contribute to teaching at the undergraduate and graduate levels including participation in the development of a biotechnology program. Applicants must have a Ph.D. and postdoctoral experience. Submit letter of application, curriculum vitae, an outline of research plans, and names of at least three references by 15 August 1986 (or until a suitable candidate can be identified) to: **Dr. Kathryn Wilson, Department of Biology, Indiana University-Purdue University at Indianapolis, P.O. Box 647, Indianapolis, Indiana 46223. An Equal Opportunity/Affirmative Action Employer.**

### UNIVERSITY OF GUELPH Veterinary Anatomist Department of Biomedical Sciences Ontario Veterinary College

Applications are invited for a probationary (tenure-track) assistant or associate professorship in gross anatomy and histology available 1 September 1986. Teaching responsibilities will be in the graduate and undergraduate programs of the department which include responsibilities to students in the D.V.M. and B.Sc. programs. The successful candidate is expected to conduct an independent research program associated with food-producing animals. Applicants must have a Ph.D. (or equivalent). A D.V.M. degree would be desirable.

The salary is negotiable and subject to final budgetary approval. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

Applications with curriculum vitae and names of three referees should be directed to: **The Chairman, Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.**

Closing date 1 September 1986, or until filled.

## POSITIONS OPEN

### FACULTY POSITIONS IN DIAGNOSTIC MOLECULAR BIOLOGY

The University of Calgary Faculty of Medicine seeks up to four suitably qualified medical scientists with backgrounds in molecular biology and/or microbiology to work within a newly established program in diagnostic and therapeutic molecular biology. Applicants should have specific interests and expertise in areas of hybridoma and/or recombinant DNA technology. Preference will be given to those individuals who have interests in molecular biology of infectious diseases, particularly of third-world countries, and/or compromised hosts. Applicants should have demonstrated evidence of strong research achievement and will be eligible for nomination for funding from the Alberta Heritage Foundation for Medical Research. The successful candidates will have an excellent opportunity to develop vigorous, independent research programs, in addition to collaborative interactions within a multidisciplinary research environment. Appointment will preferably be at the assistant professor level, although more senior individuals will be considered. Rank and salary will be those of The University of Calgary for appropriate qualifications and experience. Deadline for receipt of applications is 30 September 1986.

*In accordance with Canadian immigration requirements, priority is directed to Canadian citizens and permanent residents.*

Please submit curriculum vitae, statement of research interests, and the names of three referees to:

**Dr. R. Anderson  
Chairman, Search Committee  
Department of Microbiology and  
Infectious Diseases  
Faculty of Medicine  
The University of Calgary  
3330 Hospital Drive NW  
Calgary, Alberta, Canada T2N 4N1**

### FACULTY POSITIONS FOR RESEARCH INVESTIGATORS

Seeking research-oriented persons with training in internal medicine subspecialties to be part of sponsored research team. Requires M.D. or Ph.D. with training and research experience in related field. Send curriculum vitae and names of three references to: **Dr. Patrick A. McKee, M.D., Chairman, Department of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190. We are an Equal Opportunity Employer.**

### GEOCHEMIST, UNIVERSITY OF ROCHESTER

The Department of Geological Sciences at the University of Rochester invites applications for a tenure-track position in the general area of geochemistry. We seek an individual with an excellent research record, who is interested in teaching geochemistry and related courses at both undergraduate and graduate levels. The successful candidate is expected to establish a vigorous research program in an area of geochemistry, such as stable or noble gas isotopes, aqueous geochemistry or geochemistry of fluid-rock interactions, which would augment our current research activities in hard and soft-rock geochemistry, sedimentology, structural geology, economic geology, paleontology, and environmental geosciences.

The position is available in September 1987. Interested persons should send curriculum vitae, statements of research, teaching interests, and three letters of recommendation to: **The Chairman, Department of Geological Sciences, University of Rochester, Rochester, NY 14627.** The application deadline is 1 November 1986. *The University of Rochester is an Equal Opportunity/Affirmative Action Employer.*

**NEUROCHEMIST/BIOCHEMICAL PHARMACOLOGIST** to join active multidisciplinary neuroscience group. Experience/interest in cholinergic, amino acid, and/or peptide transmitter systems in brain. Postdoctoral to junior faculty rank with salary open, depending on experience. Write to: **D. J. Reis, Laboratory of Neurobiology, Cornell University Medical College, 411 East 69 Street, New York, NY 10021. Equal Opportunity Employer.**

## POSITIONS OPEN

Successful in-vitro fertilization program at community hospital in Boston area seeks **LABORATORY DIRECTOR**. Duties include media and sperm preparation, oocyte grading and fertilization, embryo culture, and equipment maintenance. Tissue culture experience required. I.V.F. laboratory background preferred. **Telephone: 617-965-7270.**

### NEUROBEHAVIORAL TOXICOLOGIST

Biomedical research support services laboratory in Northeast performing government and commercial toxicology studies seeking Ph.D. in toxicology, pharmacology, physiology, or related field with research experience in neurobehavioral toxicology. Responsibilities include assisting director of toxicology in the planning and management of general toxicology studies while establishing creditable laboratory services in neurotoxicology. Send curriculum vitae, references, and salary requirements to: **Donna L. Perron, Personnel Manager, EG&G Mason Research Institute, 57 Union Street, Worcester, MA 01608.**

### ORGANIC/MEDICINAL CHEMIST

**Postdoctoral position** September 1986 for chemist with synthesis training/experience to synthesize amino acid and dipeptide analogs for incorporation into biologically active peptides. Opportunity in leading laboratory of peptide synthesis and biology. Send curriculum vitae and references to: **Dr. John M. Stewart, Biochemistry-B126, University of Colorado Medical School, Denver, CO 80262. Affirmative Action/Equal Opportunity Employer.**

### UNIVERSITY OF GUELPH Neurophysiologist Department of Biomedical Sciences Ontario Veterinary College

Applications are invited for a probationary (tenure-track) assistant or associate professorship in neurophysiology available 1 September 1986. Teaching responsibilities will be in neurophysiology, neuropharmacology, and neuroanatomy to students in B.Sc. honors and D.V.M. programs. Participation in graduate education is expected and the successful candidate will conduct research in an area of neurophysiology/pharmacology. Applicants must have a Ph.D. (or equivalent). A D.V.M. would be desirable.

The salary is negotiable and subject to final budgetary approval. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

Applications with curriculum vitae and names of three referees should be directed to: **The Chairman, Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.**

Closing date 1 September 1986, or until filled.

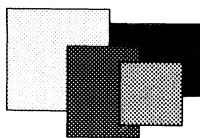
### UNIVERSITY OF GUELPH Veterinary Toxicologist Department of Biomedical Sciences Ontario Veterinary College

Applications are invited for a probationary (tenure-track) assistant or associate professorship in animal toxicology available 1 September 1986. Major teaching responsibilities will be in toxicology courses in the B.Sc. honors and D.V.M. programs with lesser duties in aspects of pharmacology. The successful candidate will be expected to conduct independent research in toxicology in relation to health of food-producing animals. Participation in undergraduate and graduate education in animal toxicology will be expected. Applicants must have a Ph.D. (or equivalent). A D.V.M. degree with experience or interest in an applied area of veterinary medicine will be sought.

The salary is negotiable and subject to final budgetary approval.

Applications with curriculum vitae and names of three referees should be directed to: **The Chairman, Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.**

Closing date 1 September 1986, or until filled.



**More Than A  
Step Ahead**

## **Research Scientist Immunology Laboratory**

A move to Collagen Corporation is more than a step forward in your career. It's a step into the future of biotechnology. With the successful research, production and marketing of Zyderm®I and Zyderm®II Collagen Implant, we are now leading the way to new applications in the areas of dermatology, plastic surgery, podiatry, dentistry, otolaryngology and orthopedics. If you're looking for a progressive, high-energy environment where creativity counts, join the innovators — at Collagen Corporation.

Collaborating with other Scientists, you will be responsible for supervising activities related to product and clinical support, as well as participating in a wound-healing research program directed at understanding and utilizing growth factors to promote tissue repair. Requirements include a PhD and 2-3 years of post-doctoral experience in cellular immunology and cell biology.

Collagen Corporation offers excellent growth potential and attractive salaries and benefits. To apply, please send your C.V., bibliography, and the names of several references to Dr. Larry Ellingsworth, Manager Immunology, Connective Tissue Research Laboratories, Box 111, 2500 Faber Place, Palo Alto, CA 94303. We are an equal opportunity employer.

**Collagen  
Corporation**



## **The Liposome Company, Inc.,**

is a growing, successful biotechnology firm rapidly emerging as a leader in the use of liposome and other lipid-based technologies in drug delivery systems and in enhancement of drug effectiveness. The company has need for expertise in product development and offers the following two challenging career opportunities:

### **Senior Scientist Product Development**

This position reports to the executive vice president, R&D, and is responsible for the preformulation and development of stable lipid-based oral, topical and parenteral dosage forms and will participate in package development and process development studies.

The successful applicant for this position will have a doctoral degree in pharmaceuticals, physical pharmacy, or pharmaceutical chemistry and 3-5 years of industrial product development experience or an M.S. degree with 5-10 years of comparable experience.

### **Product Development Research Associate**

This position reports to the senior scientist, Product Development, and is responsible to provide support in the formulation of liposome and lipid-based dosage forms.

The successful applicant for this position will have a master's degree in pharmaceuticals, physical pharmacy, or pharmaceutical chemistry and at least 2 years of industrial product development experience or a B.S. degree and 5 years relevant experience.

**Candidates for both positions** must be willing and able to work with new experimental drugs and radioactive compounds, and must be able to communicate effectively. Experience with liposomes and lipid-based technology is desirable but not required.

**The Liposome Company** is an equal opportunity employer that offers competitive salaries, comprehensive benefits and a creative environment for professional performance and growth. Interested candidates should send their resumes, three references, and salary requirements to:

**Robert M. Cohn, Ph.D.**  
Executive Vice President,  
Director of Research & Development  
The Liposome Company, Inc.  
One Research Way, Forrestal Center  
Princeton, NJ 08540

**THE Liposome  
Company INC.**

Developer, manufacturer and marketer  
of lipid based pharmaceutical products.

## **The Liposome Company, Inc.,**

is a growing, successful biotechnology firm rapidly emerging as a leader in the use of liposome and other lipid-based technologies in drug delivery systems and in enhancement of drug effectiveness. The company has need for analytical expertise and offers the following two challenging career opportunities:

### **Director of Analytical Chemistry**

This position reports to the executive vice president, R&D, and is responsible for analytical methods development, characterization, and stability studies of active ingredients, excipients, lipids and other components of liposome and lipid-based dosage forms; and participates in the design and analysis of absorption, distribution, metabolism and excretion studies.

The successful applicant for this position will have a doctoral degree in analytical chemistry and 5-10 years of industrial analytical chemistry experience.

### **Analytical Chemistry Research Associate**

This position reports to the director of analytical chemistry and is responsible for providing analytical chemistry support, including assistance in the development of analytical methods for assays of active ingredients and excipients in liposome and lipid-based dosage forms; and will assist in the design and conduct of appropriate stability and biodistribution studies.

The successful applicant for this position will have a master's degree in analytical chemistry and at least 1-2 years of industrial analytical chemical support experience.

**Candidates for both positions** must be willing and able to work with new experimental drugs and radioactive compounds, and must be able to communicate effectively. Experience with liposomes and lipid based technology is desirable but not required.

**The Liposome Company** is an equal opportunity employer that offers competitive salaries, comprehensive benefits, and a creative environment for professional performance and growth. Interested candidates should send their resumes, three references, and salary requirements to:

**Robert M. Cohn, Ph.D.**  
Executive Vice President,  
Director of Research & Development  
The Liposome Company, Inc.  
One Research Way, Forrestal Center  
Princeton, NJ 08540

**THE Liposome  
Company INC.**

Developer, manufacturer and marketer  
of lipid based pharmaceutical products.

## POSITIONS OPEN

### TRUDEAU INSTITUTE INC. \*\* SEARCH REOPENED \*\*

Positions are available for qualified **IMMUNOLOGISTS** interested in establishing independent programs in the following areas:

- Basic cellular immunology
- Tumor immunology
- Transplantation immunology
- Immunity to infectious and parasitic diseases

Preference will be given to applicants interested in immunoregulation.

Appointment will be made at the level of **assistant or associate professor**, depending on the amount of postdoctoral experience and publication record. No teaching is required. The successful applicant will be guaranteed from 3 to 5 years of support, depending on the level of appointment, but will be expected to compete for outside funding. Campus housing is available.

The Trudeau Institute is a not-for-profit, pure research institute that specializes in studying the immunology of host defense mechanisms directed against a broad spectrum of diseases. It is located on the shore of Saranac Lake, in the Adirondack mountains, 8 miles from Lake Placid.

Send curriculum vitae and the names of three references to:

**Robert J. North, Ph.D., Director**  
Trudeau Institute Inc.  
P.O. Box 59  
Saranac Lake, NY 12983

**MOLECULAR NEUROBIOLOGY:** The Institute for Advanced Biomedical Research, The Oregon Health Sciences University, invites applications for the position of senior research associate in molecular neurobiology. The position will include study of molecular mechanisms of regulation of opioid peptide gene at the level of transcription, translation, and processing; cloning and characterization of genes, encoding enzymes of opioid peptide processing; development of an in vitro system to study the intracellular sorting mechanisms of secreted neuropeptides and processing enzymes. The incumbent will also help advise and direct other members of the research group and must be able to contribute significantly to the design, execution, and interpretation of research projects. The position requires a Ph.D. in biology and prior experience in neuropeptide biosynthesis and processing, recombinant DNA chemistry, monoclonal and polyclonal antibodies, and electron microscopy. Applications, including curriculum vitae, are to be sent to: **Dr. Edward Herbert, Director, IABR-L474, The Oregon Health Sciences University, 3181 S.W. Sam Jackson Park Road, Portland, OR 97201.**

*The OHSU is an Equal Opportunity/Affirmative Action Employer.*

A growing north San Francisco Bay area genetic engineering company is seeking an exceptional **MOLECULAR BIOLOGIST** to work in a highly interactive environment.

The successful candidate must possess a Ph.D. and postdoctoral experience with respect to rDNA technology as applied to *Bacillus*. This person will be expected to develop an independent research program, supervise the work of technical personnel and be interested in providing input on other company projects. For immediate consideration, please send résumé and references to:

**Dr. W. Dirk Sikkema**  
InFerGene Corporation  
433 Industrial Way, Suite 220  
Benicia, CA 94510

## MOLECULAR BIOLOGY

American Biogenetic Sciences, Inc. is a new biotechnology company located on the campus of the University of Notre Dame. The company has postdoctoral positions available immediately involving research on the development of eukaryotic gene expression systems. Background in molecular biology is required. Interested candidates should send a description of their research interests, curriculum vitae, and arrange for three letters of recommendation to be sent to: **Dr. Morris Pollard, Lobund Laboratory, University of Notre Dame, Notre Dame, IN 46556.**

## POSITIONS OPEN

### PHYSIOLOGY FACULTY POSITIONS

The Department of Veterinary Biology at the University of Minnesota, College of Veterinary Medicine, invites applications for two full-time, 12-month, tenure-track or tenured positions at the assistant, associate or full professor levels beginning January 1987 or later. The department includes 16 faculty members in the disciplines of anatomy, biochemistry, pharmacology, and physiology. The college is located on the Twin Cities campus in St. Paul where faculty have opportunities to interact with colleagues in many other parts of the university, including the Medical School, the College of Biological Sciences, the Institute of Technology, and the College of Agriculture. Applicants must have a Ph.D. or a D.V.M./Ph.D. Assistant professor must have at least 1 year postdoctoral (post-D.V.M. or Ph.D.) experience or training. Associate and full professors must have at least 5 years of postdoctoral research experience, demonstrated success in teaching, and a funded independent research program. The associate professor would be expected to have spent part of this time in a tenure-track faculty position. The full professor would be expected to have achieved tenure in a faculty position and must have maintained a productive, funded research program; demonstrated competence in training graduate students and in teaching physiology; and should have a distinguished reputation in the scientific community. The successful applicants will be expected to participate in the teaching of systems physiology to veterinary students and to develop strong, independent research and graduate programs using modern physiological approaches. Send curriculum vitae, a statement of research interests, and the names of three references by 15 September 1986 to: **Dr. Gary E. Duke, Department of Veterinary Biology, 295 Animal Science/Veterinary Medicine Building, University of Minnesota, St. Paul, MN 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

### PLANT BIOTECHNOLOGY RESEARCH TECHNICIAN

NPI, a plant research and product company, is seeking applicants for a technical position in plant molecular biology. Project areas will include gene transfer and gene expression analysis in transgenic plants. Applicants (M.S. or B.S.) should have some experience in recombinant DNA techniques. Send curriculum vitae and the names of three references to: **Dr. James Skuzeski, NPI, 417 Wakara Way, Salt Lake City, Utah 84108.**



### POSTDOCTORAL OPPORTUNITY SCIENTIFIC COMMITTEE ON PROBLEMS (SCOPE) OF THE ENVIRONMENT MONTPELLIER, FRANCE

Postdoctoral opportunity to work on the development of global environmental programs with SCOPE. Work would be centered at the French National Center for Ecological Research (CNRS-CEPE) in Montpellier, but would involve travel to research institutes in other nations. Experience in ecological research required, preferably at the ecosystem level. Excellent opportunity for a broadening experience and for learning how integrated, international programs are formulated. Send résumé and three letters of recommendation by 1 August 1986 to: **SCOPE, National Research Council, 2101 Constitution Avenue, NW, Washington, DC 20418.** *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION(S)** available now for studies of the squalene dioxygenase pathway of steroid biosynthesis and oxysterol biochemistry (for example, *J. Biol. Chem.* **260**, 13391), and synthesis of novel inhibitors. Backgrounds in biochemistry, biosynthesis, or synthesis appropriate. Salary \$16,500 up, depending on experience. Appointment renewable up to 4 years. Submit résumé and three references to: **Professor Thomas A. Spencer, Department of Chemistry, Dartmouth College, Hanover, NH 03755.** *Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN



### POSTDOCTORAL POSITION

Nova Pharmaceutical Corporation, a unique drug development and research organization located in Baltimore, has a postdoctoral position available to examine the regulation of second messenger systems in mammalian CNS. Emphasis will be placed on examining the mechanism of GABA<sub>A</sub> receptor modulation of second messenger responses. Applicants should have experience in neuropharmacology or neurochemistry and an understanding of receptor or enzyme kinetics. This is a basic research position. Interested individuals should send curriculum vitae, a brief description of research interests, and names of three references to:

**Drs. J. Ferkany and S. J. Enna**  
c/o Mrs. Lydia K. Battaglia  
NOVA PHARMACEUTICAL CORPORATION  
5210 Eastern Avenue  
Baltimore, Maryland 21224-2788  
*Nova is an Equal Opportunity Employer*

**POSTDOCTORAL POSITION:** Dana-Farber Cancer Institute is seeking to fill one research position at the postdoctoral level to study gene transfer into hematopoietic cells via recombinant retroviruses. Opportunity to gain experience with molecular cloning, retrovirology, and gene expression. Knowledge of recombinant DNA technology and mammalian tissue culture desirable. Joint appointment will be held in an appropriate department of Harvard Medical School. Send curriculum vitae and names of three references to: **R. M. Ruprecht, M.D., Ph.D., Division of Cancer Pharmacology, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115.** *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION:** Available immediately to study DNA methylation in *Escherichia coli*. Projects include: regulation of a methylase gene expression and identification of *E. coli* genes modulated by DNA methylation. Background in microbiology/genetics/molecular biology an advantage. Send curriculum vitae to: **Dr. M. G. Marinus, Department of Pharmacology, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, MA 01605-2397.**

*An Affirmative Action/Equal Opportunity Employer.*

### POSTDOCTORAL POSITION MOLECULAR ENDOCRINOLOGY

Postdoctoral position available immediately in the Metabolic Research Unit at the University of California, San Francisco. Research areas include genetic regulation of peptide hormone genes which modulate cardiovascular homeostasis and cellular mechanisms of hormone action. Previous experience in recombinant DNA technology desirable. Interested candidates should send their curriculum vitae, recent publications, and three letters of reference by 15 August 1986 to:

**Dr. T. L. Reudelhuber**  
or  
**Dr. D. G. Gardner**  
Metabolic Research Unit  
671-HSE, Box 0516  
University of California  
3rd and Parnassus Avenues  
San Francisco, CA 94143

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

**TWO POSTDOCTORAL POSITIONS IN VIROLOGY.** Research involves the molecular biology of persistent, baculovirus infections in vitro and in vivo. Ph.D. in microbiology, biochemistry, or related field required. Experience in recombinant DNA techniques desirable. Both positions available fall 1986. Send résumé and names of three references to: **Dr. H. Alan Wood, Boyce Thompson Institute, Cornell University, Tower Road, Ithaca, NY 14853.** *An Affirmative Action/Equal Opportunity Employer.*

## Research Associate — DNA Sequencing Group

A challenging position is available in the DNA sequencing group at Cetus Corporation, a leader in biotechnology-based therapeutics for cancer and infectious disease. Based in our Emeryville headquarters, the successful candidate will be responsible for supervising a group highly skilled in DNA sequence analysis and related molecular biology for a wide variety of research projects.

Applicants must have a B.S. or M.S. in a relevant field and at least 3 years' experience in DNA sequencing and related molecular biology techniques. Strong supervisory skills as well as the ability to function independently are required.

Cetus offers competitive salaries and excellent benefits. For confidential consideration, please send your resume to:

**CETUS CORPORATION**  
Box MIS  
1400 Fifty-third Street  
Emeryville, CA 94608

E/O/E



## THE UNIVERSITY OF MELBOURNE LECTURER/SENIOR LECTURER (CONTINUING) IN BIOCHEMISTRY in the DEPARTMENT OF VETERINARY PRECLINICAL SCIENCES

Applications are invited for appointment to the above position. The appointee will be responsible for instruction in biochemistry to students in the second year of the Bachelor of Veterinary Science degree course and will be expected to develop or participate in co-operative research in the School.

The appointment is available from 1st September, 1986, and the University is anxious to make an appointment before the commencement of the academic year in 1987.

Salary in the range A\$27,233–A\$35,777 per annum (Lecturer); A\$36,541–A\$42,588 per annum (Senior Lecturer), depending upon qualifications and experience.

Telephone enquiries to Professor R. N. P. Cahill (telephone (03) 344 7347), Department of Veterinary Pre-clinical Sciences, University of Melbourne, Parkville, Victoria 3052.

Further printed information regarding details of application procedure and conditions of appointment is available from the Appointments Officer (Academic).

Applications, in duplicate, including names and addresses of at least three referees and quoting position number 260 0050 should be addressed to the Staff Officer, University of Melbourne, Parkville, Victoria 3052, Australia, and close on 31st August, 1986.

*Equal opportunity in employment is the policy of the University of Melbourne.*

## CALIFORNIA BIOTECHNOLOGY INC

### Molecular Virologist

California Biotechnology Inc. has a position available for a research scientist in our recombinant vaccine development group for viral diseases. The successful candidate will have a recent Ph.D. and relevant experience in the molecular cloning of RNA and/or DNA viruses. Knowledge of immunology and animal protection models would be useful.

California Biotechnology Inc. is a rapidly growing biotechnology and drug delivery company engaged in the development of health care products. We offer a stimulating research environment with a competitive compensation and benefits package. Submit curriculum vitae and the names of three references to:

**Human Resources/MF**  
**California Biotechnology Inc.**  
**2450 Bayshore Frontage Road**  
**Mountain View, CA 94043**

## RESEARCH MANAGER ARCTIC ENVIRONMENTAL SCIENCES

The Office of Naval Research is seeking a highly qualified individual to serve as Research Manager with responsibility for planning and managing a contract research program in arctic sciences. The research sponsored is conducted principally at universities and oceanographic institutions. This is a Civil Service position at the GM-14 or GM-15 level (\$44,430 — \$67,940), depending on qualifications.

The individual selected will establish goals for and conceive, organize and direct research and development programs in unexplored areas of arctic environmental sciences including polar physical oceanography, marine geology/geophysics, meteorology/climatology and field logistics. Responsibility of the incumbent includes analysis of research proposals, recommending appropriate action, following the progress of funded contracts in thorough technical detail, determining when contracts and programs should be terminated, insuring timely and effective dissemination of research results to other Naval elements having a need for those

results, and insuring that the program content meets anticipated Navy needs. Incumbent will be required to describe and justify his/her program both in writing and orally within the organization and to responsible bodies in the Navy and DoD. An important aspect of this position is to conceive, develop and market new research ideas to higher Navy management.

Applicants must have (1) a Ph.D. or equivalent in oceanography or in a physical science area related to physical oceanography and at least one year of professional experience or (2) acquired a minimum of three years of progressively responsible professional experience. Applicants should have significant research and/or management experience. At least one year of experience must be comparable in difficulty and responsibility to the next lower level in the Federal Service.

Interested persons should send a resume or Standard Form 171, Application for Federal Employment (available at Federal Job Information Centers or from the address below), to:

**Office of the Chief of Naval Research**  
Civilian Personnel Division, Code 01242P  
Attn: Announcement #86-46 (S)  
800 North Quincy Street  
Arlington, VA 22217-5000



Applications will be accepted through 22 August 1986 and must be received by that date. Applicants are requested to complete the appropriate supplemental forms. For further information and supplemental forms, please call (202) 696-4705.

An Equal Opportunity Employer

U.S. Citizenship Required

## POSITIONS OPEN

### POSTDOCTORAL POSITION

Available immediately for studies on the metabolism and covalent protein binding of reactive acyl glucuronide metabolites. The project is a collaborative study with **Professor L. Z. Benet**, Department of Pharmacy. Ph.D. in chemistry, pharmaceutical chemistry, or related field required, preferably with experience in HPLC, protein chemistry, and in vivo studies in animals. Send curriculum vitae and three reference letters to: **Dr. A. F. McDonagh**, Box 0538, University of California, San Francisco, CA 94143. *The University of California is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

**POSTDOCTORAL POSITION** available in the laboratory of **Dr. Robert E. Lanford** for molecular investigation of an endogenous human retrovirus isolated from human teratocarcinoma cells. The investigation encompasses sequence analysis of the retroviral genome, the effect of teratocarcinoma cell differentiation on retroviral expression, and possible expression of retrovirus sequences in human tumors. Candidates should have a background in recombinant DNA techniques including: cloning, DNA sequencing, and mRNA isolation and analysis. Send curriculum vitae and names of three references to: **Personnel Manager, Southwest Foundation for Biomedical Research**, P.O. Box 28147, San Antonio, Texas 78284.

*An Equal Opportunity Employer, M/F.*

**POSTDOCTORAL POSITIONS** available immediately for working on cellular and molecular mechanisms in two areas: neuronal development and regeneration, and excitable properties of cortical dendrites. Methods used are in vivo intracellular and patch-clamp recordings, combined with morphological correlations and computational neural modeling. Send curriculum vitae and three letters of reference to: **Dr. Gordon M. Shepherd**, Section of Neuroanatomy, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510. *Yale University is an Affirmative Action Employer.*

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available for biochemical/cell biological studies on the structure, function, and regulation of **ADENOSINE RECEPTORS**. Recent Ph.D. in biochemistry, pharmacology, or molecular biology required. Experience with membrane-bound receptor systems useful. Send curriculum vitae and names of three references to: **Dr. Gary L. Stiles**, Department of Medicine, P.O. Box 3444, Duke University Medical Center, Durham, NC 27710.

**POSTDOCTORAL POSITION** available July 1986 for 1 to 2 years to study DNA/ligand interactions and DNA conformation. Ph.D. or equivalent required. Experience in physical-chemical techniques including NMR desirable. Send curriculum vitae and names of three references to:

**Dr. Richard H. Shafer**  
Department of Pharmaceutical Chemistry  
University of California, San Francisco  
San Francisco, CA 94143

**POSTDOCTORAL POSITION**, available 1 September to participate in studies of biochemistry and molecular biology of neural growth factors and growth-associated proteins. Ph.D. with experience in molecular genetics preferred. Contact: **Dr. Seth Finklestein**, Mailman Research Center, McLean Hospital, Belmont, MA 02178; telephone: 617-855-3206. *McLean Hospital is affiliated with Harvard Medical School and is an Equal Opportunity Employer.*

**POSTDOCTORAL POSITION IN CARDIOVASCULAR PHARMACOLOGY**. Available immediately for a recent Ph.D. in pharmacology, physiology, or biochemistry. The project is related to identification, isolation, and purification of purine receptors. Salary NIH level. Experience in receptor biochemistry or pharmacology preferred. Send curriculum vitae and three letters of recommendation by 30 September 1986 to: **Dr. S. Jamal Mustafa**, Department of Pharmacology, East Carolina University, Greenville, North Carolina 27834. *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### POSTDOCTORAL FELLOW/ RESEARCH ASSOCIATE

A position is available to participate in a project to clone enzymes of prostaglandin and leukotriene biosynthesis. Candidates should have experience in molecular cloning and sequencing of eukaryotic genes. Salary and fringe benefits are competitive. Interested individuals should submit curriculum vitae and arrange for three letters of recommendation to be sent to: **Professor Lawrence J. Marnett**, Department of Chemistry, Wayne State University, Detroit, MI 48202. *Wayne State University is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available for NIH funded project to work on the biochemical and genetic characterization of Kell blood group antigens. Background in protein chemistry is required. Will join an active collaborative research group which includes laboratories involved in DNA recombinant technology, membrane biochemistry, and blood group serology. A competitive salary and excellent benefits are offered. Please send résumé and names of three references to: **C. M. Redman**, Ph.D., New York Blood Center, 310 East 67 Street, New York, NY 10021. *Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** in neurobiology now available for Ph.D. in biochemistry or related field to study cell migration and cell surface recognition events in the developing nervous system. Desirable expertise includes: neural cell culture, cellular proteases, protein purification, monoclonal antibody production, immunocytochemistry, and electrophysiology. Send curriculum vitae, summary of research interests and experience, and names of three references to: **Dr. Nicholas W. Seeds**, Department of Biochemistry/Biophysics/Genetics, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver, CO 80262. *An Affirmative Action/Equal Opportunity Institution.*

# 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 Office of Scientific Services, Centers for Disease Control, invites applications and nominations for the position of CHIEF, BIOLOGICAL PRODUCTS BRANCH.**

This position is responsible for directing the work of 20–25 employees engaged in cell culture and cell culture medium production, service and research activities. A Ph.D. or equivalent experience is required. Should have experience in cell biology, the nutritional and hormonal growth factors associated with cell replication and differentiation, and a thorough knowledge of the requirements for the *in vitro* growth of bacterial, fungal and parasitic disease agents. Salary will be commensurate with training and experience with a range of \$44,430.00 to \$52,262.00. Applicants should send a curriculum vitae and names of three references to **William R. Hudson, Centers for Disease Control, Atlanta, GA. 30333**, within 30 days.

*CDC is an equal opportunity employer.*



**INDIAN INSTITUTE OF SCIENCE  
BANGALORE-560 012**

Invites applications for regular FACULTY POSITIONS in Experimental Condensed Matter Physics in the Department of Physics from outstanding candidates with specialisation in the preferred areas of Lasers, Semiconductors, Physics at Low Temperatures and High Pressures and Physics of Biological Systems. Applicants in other areas of condensed matter physics may also be considered. Appointment at Assistant Professor level is anticipated but will also be considered at Professor level in the areas of lasers and semiconductors if the applicants have demonstrated outstanding research and leadership accomplishments.

A resume and three letters of reference should be sent to Prof. M. A. Viswamitra, Chairman, Department of Physics, Indian Institute of Science, Bangalore-560 012, India.

Those wishing to draw attention to potential candidates are also welcome to write to the Chairman of the Department.

Advt. No. R(IA) 308-3/86

REGISTRAR

ASP IIS 8604

## **PROGRAM MANAGER ELECTRONICS AND ELECTROOPTICS TECHNOLOGY**

The Office of Naval Research is seeking a highly qualified individual to plan and manage applied research and development programs in Electronics and Electrooptics Technology. These programs are conducted at various academic institutions and Navy, Government and industrial laboratories. This is a Civil Service position at the GS-13, 14 or 15 level (\$37,599—\$67,940), depending on qualifications.

The individual selected will establish goals for and conceive, organize and direct applied research, exploratory and advanced development programs in the areas of electronic and electro-optic devices and materials, with application to sensors and radar; electronic warfare; analog, digital and optical computing; signal processing; and command, communication, control and intelligence. Specific technologies relate to radio frequency, microwave and millimeter wave solid state devices; microelectronics; fiber optic surveillance and communications links; integrated circuitry; imaging and countermeasures capability. The incumbent will be required to conceive, organize, and carry

through to completion self-identified assignments for generating programs of a scope, difficulty, and complexity in which scientific and technological judgement and leadership are required to evaluate method, feasibility, and applicability. The incumbent will describe and justify his/her program both in writing and orally within the organization and to responsible bodies in the Navy and DoD. An important aspect of this position is to conceive, develop and market new ideas in applied research and development to higher Navy management.

Applicants must have (1) a Ph.D. or equivalent training in relevant areas of science and technology and at least one year of professional experience or (2) acquired a minimum of three years of progressively responsible professional experience. Applicants should have significant active research/technology and/or technical program management experience.

Interested persons should send a resume or Standard Form 171, Application for Federal Employment (available at Federal Job Information Centers or from the address below), to:

**Office of the Chief of Naval Research**  
Civilian Personnel Division, Code 01242P  
Attn: Announcement #86-50 (S)  
800 North Quincy Street  
Arlington, VA 22217-5000



Applications will be accepted through 11 August 1986 and must be received by that date. Applicants are requested to complete the appropriate supplemental forms. For further information and supplemental forms, please call (202) 696-4705.

An Equal Opportunity Employer

U.S. Citizenship Required

## POSITIONS OPEN

### POSTDOCTORAL POSITION ANNOUNCEMENT

Department of Plant Pathology  
University of California, Berkeley

The Department of Plant Pathology at the University of California, Berkeley, will have several postdoctoral positions available during 1986 in the following areas of study: molecular biology of plant-infecting viruses and bacteria, ecology and epidemiology of fungal plant pathogens, and the biological control of plant pathogens. Interested individuals should send curriculum vitae and names of three references to: **Chair, Department of Plant Pathology, University of California, Berkeley, CA 94720. The University of California is an Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available immediately to participate in a project for the isolation, cloning, sequencing, and study of regulation of maize genes involved in carotenoid biosynthesis. Experience in restriction mapping, cloning, and DNA sequencing of eukaryotic genes is desired. Three years of support assured. Submit statement of research experience and curriculum vitae, listing three references (with telephone numbers) to: **Dr. David Morris, Department of Genetics, Iowa State University, Ames, Iowa 50011; telephone: 515-294-4618. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available to study cardiovascular structure and function in reptiles. Preference will be given to individuals who have interest or training in cardiovascular physiology (or morphology) and who are familiar with ectothermic vertebrates. Appointment is for 1 year with possibility of renewal 2 to 3 years. Send curriculum vitae and names, addresses, and telephone numbers of three references by 15 August to: **Dr. H. B. Lillywhite, Department of Zoology, University of Florida, Gainesville, FL 32611. An Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE IN CELL BIOLOGY/IMMUNOPHARMACOLOGY.** Research involves elucidation of molecular mechanism(s) of action of a novel, highly potent immunosuppressive agent that selectively and reversibly inhibits interferon-induced responses in cultured cells. Salary commensurate with qualifications. Send curriculum vitae to: **Dr. L. T. Webster, Jr., Chairman, Department of Pharmacology, School of Medicine, Case Western Reserve University, Cleveland, Ohio 44106. An Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE POSITION** in cloning of genes of fish viruses for vaccines. Area of study includes gene cloning, DNA sequencing, protein purification, and characterization. Send curriculum vitae and names of references to: **C. Passavant, Department of Microbiology, Oregon State University, Corvallis, Oregon 97331-3804. Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973. Closing date: 1 August 1986.**

**RESEARCH ASSISTANT PROFESSOR.** Qualified to do research and teaching in anti-brain tumor therapy with M.D. or Ph.D. degree. Salary \$25,000 negotiable. Send letters of application, curriculum vitae, and three letters of recommendation to: **Leon D. Prockop, M.D., Box 55, Department of Neurology, University of South Florida College of Medicine, 12901 North 30 Street, Tampa, FL. USF is an Affirmative Action/Equal Opportunity Institution.**

**RESEARCH ASSISTANT PROFESSOR,** nontenure track, M.D. or Ph.D. Qualifications include ability and research record in molecular genetics. Candidate should have independent research support, and be willing to work on current departmental projects. Please send curriculum vitae and three letters of reference to: **Roy D. Schmickel, M.D., Chairman, Department of Human Genetics, University of Pennsylvania, School of Medicine, Philadelphia, PA 19104-6072. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### POSTDOCTORAL RESEARCH ASSOCIATES

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

Immediate opening at a **RESEARCH ASSISTANT PROFESSOR** level for a junior person with 2 to 3 years of training in molecular biology to work on factors regulating gene expression of lipid-modifying enzymes in cell cultures and in human subjects. The work will be conducted in a newly established Center of Cell and Molecular Biology at the University of Chicago. For information, telephone: 312-962-1775 or write to: **Lipoprotein Study Unit, 5841 South Maryland, Box 231, Chicago, IL 60637. Résumé and three letters of recommendation required. Equal Opportunity Employer.**

### RESEARCH ASSOCIATE

Applications are invited for a postdoctoral position from persons with the Ph.D. or M.D. degree to study the role of synapse elimination in the development of neuromuscular compartments. Studies include anatomical and physiological analyses of muscle innervation patterns and anatomical mapping of spinal motoneurons. Send curriculum vitae and three letters of recommendation to: **Dr. Arthur W. English, Department of Anatomy and Cell Biology, Emory University, Atlanta, GA 30322. Emory University is an Equal Opportunity/Affirmative Action Employer.**

**RESEARCH ASSOCIATE.** Two-year position available immediately in genetic toxicology to conduct research on DNA-chemical adduct formation and detection in mice. Ph.D. with experience in DNA isolation, chromatography, and radioisotope handling preferred. Salary commensurate with experience. Send résumé, transcript, and letters of reference to: **Thomas Atherholt, Ph.D., Department of Microbiology, Coriell Institute for Medical Research, Camden, NJ 08103.**

### RESEARCH ASSOCIATE

Position available immediately involving studies on the mechanisms of tumor and retrovirus-mediated immunosuppression. Applicants should have prior experience in performing immune function assays. Experience in molecular biology and/or protein purification desirable, but not required. Interested applicants should send their curriculum vitae and names and addresses of three references to: **Dr. George J. Cianciolo, Howard Hughes Medical Institute, Box 3892, Duke University Medical Center, Durham, NC 27710.**

**RESEARCH INSTRUCTOR,** specializing in biochemical and immunochemical markers of drug resistance in human tumors. Teaching will also be required. Outstanding candidates holding a Ph.D. in biochemistry-immunology with at least 3 years of postdoctoral experience in protein purification, tissue culture, monoclonal and polyclonal antibody production, and basic analytical techniques are invited to apply. Preference will be given to applicants with experience in drug resistance studies, and with prior teaching experience. Salary commensurate with experience and qualifications: Range \$18,000 to \$25,000 per year. Send résumé and names and addresses of three references, along with a brief description of current research work to: **Minerva De La Garza, MEDICINE/Oncology, University of Texas Health Science Center, San Antonio, Texas 78284-7884. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**RESEARCH ASSOCIATE:** Ph.D. in physiology, biochemistry or related field for interdisciplinary research of salivary gland function in ixodid ticks. Research will center on biochemical regulation of the secretory process. Excellent laboratory and animal rearing facilities. Available immediately. Send résumé and names of references to: **Dr. R. C. Essenberg, Department of Biochemistry or J. R. Sauer, Department of Entomology, Oklahoma State University, Stillwater, OK 74078. Closing date 1 August 1986.**

### RESEARCH NUTRITIONIST—BIOCHEMIST RESEARCH ASSOCIATE

The Department of Biochemistry of the George Washington University seeks a qualified Ph.D. with experience in basic and clinical studies in the field of gastrointestinal physiology. The successful applicant will participate in ongoing research on the effects of dietary fibers and lipids on intestinal transport/physiology and development of future research models. Salary negotiable. Position available immediately. Contact: **Dr. George V. Vahouny, Department of Biochemistry, The George Washington University, School of Medicine and Health Sciences, 2300 Eye Street, NW, Washington, DC 20037. The George Washington University is an Equal Opportunity/Affirmative Action Employer.**

### UNIVERSITY OF MINNESOTA RESEARCH PSYCHIATRIST

The University of Minnesota, Department of Psychiatry, seeks an internationally known biological research psychiatrist for a senior tenured, full professorship. Successful candidates will have already contributed greatly to understanding the biological basis for mental illness and also have the potential for significant new contributions. His or her special field of inquiry should be in basic neuroanatomic, neurophysiologic, neurochemical, or similar frontier which they have defined and developed. Demonstration of excellence should include an M.D. degree, completion of a psychiatry residency in a research-oriented university-based psychiatry department, minimum academic preparation of 10 years postresidency training, demonstration of multidisciplinary research training beyond psychiatry, demonstration of research and publication skills early and throughout their career, senior faculty appointment in several academic and clinical appointments, an ability to obtain continuing grant support, and an international reputation. This full professor will spearhead efforts at recruitment of other younger biological psychiatrists to develop a strong departmental neurosciences component. He or she must be an excellent teacher and clinical practitioner to work with psychiatry residents and students in modern biologically based, diagnostically precise, and sound psychiatric patient management. Send correspondence including curriculum vitae and three references to: **James Halikas, M.D., Professor of Psychiatry, Chairman, Biological Psychiatry Search Committee, Department of Psychiatry, Box 393 Mayo, University of Minnesota, Minneapolis, MN 55455. Last date for receipt of applications is 1 September 1986. The University of Minnesota is an Equal Opportunity Employer and educator and specifically invites and encourages application from women and minorities.**

### RESEARCH SCIENTISTS NEW VENTURE OPENINGS

BioGrowth, Inc., a recently organized and funded biotechnology company, is building its staff and has openings for the following scientists:

**MOLECULAR BIOLOGISTS** with in-depth technical knowledge and proven experience with state-of-the-art cloning and expression system development. This should include RNA isolation, library construction and screening, M13 DNA sequencing, and vector construction.

**RETROVIROLOGISTS** with emphasis in mammalian cell expression.

Prefer 2 to 4 years of hands-on industry experience in addition to strong technical background.

We are located in the Bay Area and offer excellent salary and benefits. For confidential consideration, send your résumé, salary requirements, a letter describing your qualifications, and the names of three references to: **Vice President and Technical Director, BioGrowth, Inc., 505 Ortega Street, San Francisco, CA 94122.**

Intelligenetics, Inc., a Joint Venture between Amoco and IntelliCorp, is expanding the staff of the BIONET National Computer Resource for Molecular Biology. The BIONET Resource, funded by the N.I.H., provides the not-for-profit research communities access to the latest computer software for molecular biology.

BIONET is seeking qualified candidates for two positions to advance its core and collaborative research activities:

**Resource Manager:** Responsible for the day-to-day operations, including coordination of service and training activities, and with special emphasis on research, working with staff and the BIONET Scientist.

**Scientist:** Responsible for core and collaborative research projects aimed at making state-of-the-art software available to the BIONET community.

Both positions require a PhD, or equivalent experience, in molecular biology or related field, with a strong interest in software development and applications. Extremely important are a demonstrated ability to conduct research projects, good communication skills, and a desire to work with a team of people dedicated to supporting an international community of molecular biologists. Compensation is competitive; salary level commensurate with experience.

If you are interested in a career that merges molecular biology and computer science, please send a resume in confidence, with references and salary requirements, to: Dennis H. Smith, Principal Investigator, BIONET, Intelligenetics, 1975 El Camino Real West, Mountain View, CA 94040. EOE.

# BIONET™

The National Computer Resource for  
Molecular Biology

## THE SCIENCE RECRUITMENT

### "FOUR DAY CLOSE"

NOW YOU CAN SEE YOUR AD IN SCIENCE  
FOUR DAYS AFTER SUBMISSION

Scientific Recruiters can now advertise positions almost as soon as the need arises. Instead of reserving space a month or more in advance, you can now place your ad four days before the magazine mailing date.

Film (right-reading, emulsion face down), and insertion order must reach: SCIENCE, Short Close Desk, 1515 Broadway, New York, NY 10036 by NOON Mondays (except for legal holidays when material must reach New York by Noon Fridays). Because space is limited, the four-day close page will be reserved on a first-come, first-served basis.\*

Now you don't have to wait to find the researchers you need immediately, nor must you advertise in a Sunday paper that pans a lot of sand, but not much gold. Scientific employers know that SCIENCE ads fill the job better. Now they fill it faster too.

You can call it "INSTANT RECRUITMENT."

For further information, telephone Ed. Keller, Recruitment Advertising Manager, or Donna Rivera, Production Manager at SCIENCE 212-730-1050, or write to: SCIENCE, 1515 Broadway, NY, NY 10036.

**CURRENT DISTRIBUTION 160,000**

\*At a 15% Premium

## Assistant/ Associate Scientists

### Explore A Position Today With The Industry Of The Future.

The Agricultural Division of CIBA-GEIGY is respected for both the quality of its research and the highly accomplished scientists it attracts. To maintain our position of leadership in plant biotechnology, we currently seek to fill 3 positions at the Assistant or Associate Scientist level at our facility located in Research Triangle Park, NC.

The successful candidates should have a BS/MS in Biochemistry/Biological Sciences with interest in plant sciences plus a minimum of 2 years' experience in one of the following areas: protein purification, enzymatic assays, subcellular fractionation; or molecular biology, recombinant DNA and/or DNA sequencing; or plant tissue culture with interest in molecular biology.

In return for your expertise, you'll receive a competitive salary, a comprehensive benefits package and the opportunity to contribute to a highly professional and innovative environment. For prompt and confidential consideration, please forward your curriculum vitae to: Dr. Mary-Dell Chilton, Agricultural Biotechnology Research Unit, CIBA-GEIGY Corporation, P.O. Box 12257, Research Triangle Park, NC 27709-2257. An Equal Opportunity Employer m/f/h/v.

Progress Through Innovation

# CIBA-GEIGY

## Research Scientists A Responsive Research Environment

### Pioneer new discoveries in human therapeutics

You'll find the research environment at Schering-Plough supportive, progressive, responsive to your ideas, and engaged in some of today's most critical research challenges.

**Ph.D. Biochemist**—should have the experience or strong potential to study receptor related phenomena with immunologically active ligands. Background in receptors and mechanisms of signal transduction at the membrane and cell level preferred.

**Ph.D. Immunologist**—to conduct research designed to understand the effects of lymphokines and other modulatory substances on cells of the immune systems—in vitro and in vivo. Should have broad background in cellular immunology, and experience in the regulation of host defense mechanisms.

Please send curriculum vitae to: Louis DeMartino, Schering Research, Box DD86-11, 60 Orange Street, Bloomfield, NJ 07003. US citizenship or permanent visa required. An equal opportunity employer.



Schering-Plough

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH ASSOCIATE** (anticipated for August or September 1986)—to work on the biochemistry, cell biology, cell physiology, molecular biology, and whole animal nutrition studies of the eye lens. All studies involve aspects of protein metabolism as it is affected by aging. Send résumés to: **Dr. Allen Taylor, U.S. Department of Agriculture (USDA), Human Nutrition Research Center on Aging at Tufts University, 711 Washington Street, Boston, MA 02111. Affirmative Action/Equal Opportunity Employer.**

## RESEARCH ASSISTANT

**CAMPBELL INSTITUTE for RESEARCH and TECHNOLOGY (CIRT)** has an immediate opening for a research assistant in the Mushroom Research Group. This individual will be responsible for developing various biochemical and/or physiological techniques for factors which influence quality and productivity of *Agaricus* mushrooms. This person should have an M.S. in either biochemistry or a related area, and should have expertise in GC, HPLC, and other analytical techniques. Send curriculum vitae and transcripts to: **Dr. Duane Berry, CIRT, Box 311, Napoleon, Ohio 43545.**

*CIRT is a division of Campbell Soup Company  
An Equal Opportunity Employer*

The Department of Medical Oncology of the City of Hope National Medical Center has an immediate opening for a **SENIOR POSTDOCTORAL FELLOW OR ASSISTANT PROFESSOR** level individual to pursue independent research on the molecular biology of anticancer drug resistance. Competitive salary and research financial support. Interested individuals with a Ph.D. degree in molecular biology or related fields and at least 1 to 2 years of postdoctoral experience should send letter of inquiry and curriculum vitae to: **Dr. James Doroshow, Director, Department of Medical Oncology and Therapeutics Research, City of Hope National Medical Center 1500 East Duarte Road, Duarte, CA 91010.**

## SENIOR STAFF SCIENTIST

Applications are invited for this position to work in our new Biotechnology Research Center (Meyo Laboratories, Inc.) in Rockville, Maryland. Applicants must have Ph.D. in molecular biology and 5 years of postdoctoral experience in techniques involving receptor biology, protein chemistry, and molecular biology. This experience is essential. Salary commensurate with background. Qualified individuals are required to submit their curriculum vitae to: **Personnel Department, Meyo Laboratories, Inc., 6715 Electronic Drive, Springfield, VA 22151, Attention: 2008.** Deadline for application is 1 August 1986.

The Tobacco and Forage Research Unit, Agricultural Research Service, U.S. Department of Agriculture (USDA), Lexington, Kentucky, is accepting applications from qualified plant physiologists for the following position:

**SUPERVISORY PLANT PHYSIOLOGIST, GM-13/14/15** (research leader). Assignment presents an opportunity to conduct research on plant physiological processes, genetics, and cytogenetics to improve plant quality. Must be U.S. citizen. Salary \$37,599 to \$67,940, based on qualifications and experience. Ph.D., plus extensive research experience is desirable. Usual federal government benefits apply. For further information and application packet, telephone: **301-344-1508, U.S. Department of Agriculture, Beltsville, MD 20705.** Refer to **6S007** when inquiring about vacancy. Completed applications must be received by 1 September. *USDA is an Affirmative Action/Equal Employment Opportunity Employer.*

**URBAN WILDLIFE FACULTY POSITIONS.** The Department of Wildlife and Range Sciences, University of Florida, invites applications for one tenure-track and two annually renewable extension/research positions in urban wildlife management. Submit application (curriculum vitae, transcripts, and three letters of reference) by 15 August 1986 to: **Dr. W. R. Marion, Chair, Search Committee, Department of Wildlife and Range Sciences, University of Florida, Gainesville, FL 32611; telephone: 904-392-5420.**

## POSITIONS OPEN

**VIROLOGIST/MOLECULAR BIOLOGIST.** The Ophthalmology Research Laboratories, Cedars-Sinai Medical Center, a University of California, Los Angeles—affiliated hospital, is seeking applicants for a full-time, tenure-track equivalent assistant professorship in the Virology Research Division. Applicants should hold a Ph.D. or equivalent in the area of microbiology/molecular biology; have interest in pathobiology of herpes simplex infections, and demonstrated ability to carry out independent research. The successful applicant will be a staff member of a permanently endowed research facility. Send curriculum vitae, letter outlining research interests, and three letters of recommendation to:

**Anthony B. Nesburn, M.D. (RA)  
Cedars-Sinai Medical Center  
Halper Building, Suite 116  
8700 Beverly Boulevard  
Los Angeles, CA 90048**

## PROFESSORSHIPS

**THE ERNA AND JAKOB MICHAEL  
VISITING PROFESSORSHIPS 1987-1988  
THE JOSEPH MEYERHOFF  
VISITING PROFESSORSHIPS 1987-1988**

The Weizmann Institute of Science, Rehovot, Israel, offers a limited number of visiting professorships in the Natural and Exact Sciences.

The visiting professorships are intended for candidates already holding the rank of full professor or equivalent and will be for a duration of 2 months to 1 year.

Deadline for submittance of completed applications is: 31 December 1986.

For further information or application forms, please contact: **The Academic Secretary, The Weizmann Institute of Science, Rehovot, ISRAEL 76100.**

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIPS** available in multidisciplinary program designed to provide training in the neurobiology of development and regeneration. Research opportunities are available in neural plasticity, the mechanism of synaptogenesis, the regulation of neuronal survival, the control of neuronal differentiation, calcium in neuronal function, and the ability of the nervous system to recover from injury. Program is located in a neuroscience research institute and correlates morphology with physiology, biochemistry, pharmacology, and cell and molecular biology. Available immediately for 1 to 3 years. Send curriculum vitae, brief description of research interests, and names and addresses of three references to: **Leonard L. Ross, Chairman, Department of Anatomy, Medical College of Pennsylvania, 3200 Henry Avenue, Philadelphia, PA 19129. Equal Opportunity Employer, M/F.**

## POSTDOCTORAL FELLOWSHIP MOLECULAR ENDOCRINOLOGY

Position available to study the regulation of atrial natriuretic factor in hypertension at both transcriptional and translational levels. Requires experience with a variety of molecular biology techniques. Salary range \$18,000 to \$20,000, plus fringe benefits. Send curriculum vitae and names of three references to: **Joseph Wiener, M.D., Professor and Chairman, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.**

*An Equal Opportunity/Affirmative Action Employer*

**POSTDOCTORAL FELLOWSHIP** in psychiatry and behavioral medicine available immediately to study pharmacologic probes of CNS disorders in women and to develop own research interests. Collaboration in other areas of psychiatry and medicine encouraged. Salary: \$33,350 per year. Send curriculum vitae, reprints, and names of three references to: **Robert Freedman, Ph.D., Director, Behavioral Medicine, Wayne State University, 951 East Lafayette, Detroit, Michigan 48207.**

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIPS

Studies on neuropeptide metabolizing enzymes and their inhibitors. The project involves isolation and characterization of peptidases from brain and pituitary, design and synthesis of inhibitors, and evaluation of the pharmacological properties of these inhibitors. This broad-based project can accommodate candidates trained in biochemistry, organic chemistry, or the neurosciences. Fellowships are supported by a training grant from the National Institute of Drug Abuse (NIDA). Requirements: Ph.D. or M.D. degree and U.S. citizenship or permanent resident. Salary: NIDA stipend, plus supplement. Immediate availability. Send curriculum vitae and names of three references to: **Dr. Sherwin Wilk, Department of Pharmacology, MOUNT SINAI SCHOOL of MEDICINE, One Gustave L. Levy Place, New York, NY 10029. An Equal Opportunity Employer.**

## MARKETPLACE

**MINI & MICRO SENSOR SYSTEMS**



**Tissue & intra-cellular electrodes**

- Ca<sup>++</sup>
- PO<sub>4</sub>
- pH
- K<sup>+</sup>

**Complete line of compatible instrumentation. Send for catalog.**



**Diamond Electro-Tech Inc.**  
1230 Eisenhower Place  
Ann Arbor, MI 48104  
(313) 973-7000 • (800) 262-3654

Circle No. 90 on Readers' Service Card

## CLONES WANTED

Biotechnology company seeks additional human products. Recombinant DNA clones of human proteins, viral proteins and monoclonal antibodies to human proteins are of great interest.

If you want to see the development of your clones into a product, then please submit a complete description of your potential product to

**BOX 134 SCIENCE**

**ALL INFORMATION WILL REMAIN CONFIDENTIAL**

## ANALOG COMPUTER FOR SALE OR LEASE

New DATA GENERAL MV8000 system, complete with printers and terminals. Purchased in 1985. We should have purchased a digital computer for our operations. Our misfortune can be your gain. Will sell system or components, or lease @ 6% interest, three to five years. Call Ray Koukari, Systems Manager

**414-784-5533.**



**TEKRA CORPORATION**  
16700 W. Lincoln Avenue  
New Berlin, WI 53151

Circle No. 79 on Readers' Service Card

# DIAGNOSTICS

## RESEARCH AND PRODUCT DEVELOPMENT

### TORONTO

Allelix Inc. is a biotechnology-based company developing products and processes for agriculture, diagnostics and specialty chemical markets. From our formation in 1983, we have grown to a staff of nearly 200 and have established important proprietary technologies for our market areas.

We are presently expanding our diagnostics research and product development team and seek the following creative, energetic individuals with the desire to see their research ideas become successful products.

## SENIOR RESEARCH SCIENTIST

### **Immunoassay Development**

Applicants must have a proven track record in managing the successful research and development of immunodiagnostics test kits. A minimum of five years' industrial experience and a PhD in microbiology, immunology or immunochemistry are required. (File No. DD8605)

## ENGINEERS

Successful candidates will have industrial experience in the design and production of plastic biomedical devices. Exposure to project management and hands-on experience in tooling and moulding would be an advantage. (File No. DD8606)

## RESEARCH SCIENTISTS

### **Immunoassay Development**

Applicants must have a record of successful development of creative immunoassay test chemistries for infectious disease. A minimum of two years' industrial experience and a PhD in microbiology or immunology are required. (File No. DD8607)

## POST-DOCTORAL FELLOWS

### **Molecular Biology**

Two scientifically challenging positions concentrating on the cloning, expression and sequencing of genes coding for diagnostically important microbial antigens. A recent PhD in molecular biology or microbiology is required. These are two year contract positions

with the potential for career advancement after the second year. (File No. DD8608)

## PEPTIDE CHEMIST TECHNICIAN

Applicants will have at least one year's experience in the synthesis and characterization of peptides and peptide conjugates. A solid background at the MS level in organic chemistry is required. (File No. DD8609)

## RESEARCH TECHNICIANS

Applicants must have several years' experience in one or more of the following areas: hybridoma production, microbiology, immunoassay development or protein chemistry. Industrial experience preferred. (File No. DD8610)

We are located in a custom-designed and very well equipped facility on the outskirts of Toronto and provide fully competitive salaries and benefits.

These are permanent positions and assistance with relocation expenses will be provided.

Please send a detailed application, supported by 3 references and quoting the appropriate File Number to Mr. Walter L. Gagen, Administrative Manager, Allelix Inc., 6850 Goreway Drive, Mississauga, Ontario, Canada L4V 1P1.

We are an equal opportunity employer.

# Allelix<sup>INC</sup>

Our HPLC Systems Have Something Extra:

# A Direct Line to Technical Support.

Our HPLC systems have many benefits we can talk about: Our new, easy-to-use system control software that runs on an IBM PC AT and gives you complete control and faster analysis. Our total modularity that lets you use new methodologies or adapt to changing research requirements.

We can point to our interchangeable pump heads, mixing chambers and flow cells that let you scale up or down quickly and inexpensively for almost any application. You don't replace components, you just change them to meet your new needs.

**But that's just us talking to you.** We know buying an HPLC system is a complex decision—whether it is your first or fiftieth. That's why we've added the Gilson Hotline. Use it before you buy to be sure our system will meet your needs, and use it after you buy for continuing technical support.

Need help with an application? A question about set-up? Data analysis or scale-up to prep? Just dial our direct line for answers.

Call us today at **800-445-7667**. Find out how our HPLC system can solve your separation problem.

For literature circle reader service number 31.

To have a Representative call circle reader service number 32.



 **GILSON**  
INTERNATIONAL

GILSON MEDICAL ELECTRONICS, INC.  
BOX 27, 3000 W. BELTLINE HWY., MIDDLETON, WI 53562 USA  
TEL: (608) 836-1551 TELEX: 26-5478

GILSON MEDICAL ELECTRONICS (FRANCE) S.A.  
72 RUE GAMBETTA, B.P. NO. 45, 95400, VILLIERS-LE-BEL, FRANCE  
TEL: (1) 39.90.54.41 TELEX: 696682

The Gilson Hotline:

**800-445-7667**

Outside the U.S., contact your Gilson representative.