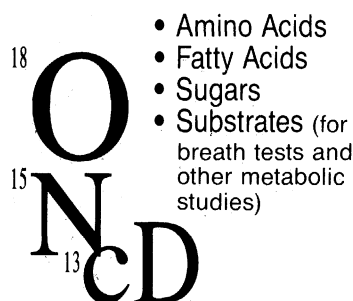


Make

# THE SOURCE

Your Source for STABLE ISOTOPES

Isotec Inc. offers the scientific community one of the world's largest selections of stable isotopes and labelled compounds



You Get More From

# THE SOURCE

- > 99% chemical purity
- High isotopic enrichment
- Competitive prices
- Fast delivery

Plus . . .

metal stable isotopes, helium-3 and other noble gas isotopes, other enriched stable isotopes, multiply-labelled compounds and custom synthesis

Call or write for your NEW complete price list today!

**ISOTEC INC.**  
A Matheson, USA Company

3858 Benner Road, Miamisburg, OH 45342  
(513) 859-1808 (800) 448-9760  
Telex: 288278 Fax: (513) 859-4878

*Baltimore Lectures on Molecular Dynamics and the Wave Theory of Light.* The present commemorative volume brings together the texts of the lectures as recorded stenographically at the time of delivery and a collection of essays on related themes by present-day scholars. The 20 lectures, with an appendix and "index" (bibliographies and analytic table of contents), occupy about half the book. The 10 essays that occupy the remainder are grouped under the headings Historical Perspectives on the Age of Kelvin and Philosophical Reflections on Theoretical Physics Since Kelvin. The historical essays (by P. M. Harman, B. J. Hunt, M. N. Wise and C. Smith, and L. Badash) center on Maxwell and the Maxwellians and include a consideration of Rutherford. The philosophical group (by H. Stein, A. Shimony, P. Teller, J. Earman, A. Fine, and T. Nickles) deals with issues of conceptual descent, the parts-whole problem, debates over space-time, action at a distance, the quantum-measurement problem, and the divergence of philosophy and physics.—K.L.

## Reprints of Books Previously Reviewed

**Group Structure of Gauge Theories.** L. O'Raifeartaigh. Cambridge University Press, New York, 1988. Paper, \$13.95. *Reviewed* 234, 93.

**On Human Nature.** Edward O. Wilson. Harvard University Press, Cambridge, MA, 1988. Paper, \$8.95. *Reviewed* 204, 735 (1979).

**Superstring Theory.** Michael B. Green, John H. Schwarz, and Edward Witten. Cambridge University Press, New York, 1988. 2 vols. Vol. 1, Introduction. Paper, \$19.95. Vol. 2, Loop Amplitudes, Anomalies, and Phenomenology. Paper, \$29.95. *Reviewed* 238, 94 (1987).

**Wave Interactions and Fluid Flows.** Alex D. D. Craik. Cambridge University Press, New York, 1988. Paper, \$19.95. *Reviewed* 235, 1522 (1987).

## Books Received

**Adaptive Strategies and Population Ecology of Northern Grouse.** Arthur T. Bergerud and Michael W. Gratson, Eds. University of Minnesota Press, Minneapolis, 1988. xxiv, 809 pp., illus. \$59.50; paper, two volumes, \$17.95 each. A Wildlife Management Institute Sponsored Book.

**Advances in Electrophoresis.** Vol. 1. A. Chrambach, M. J. Dunn, and B. J. Radola, Eds. VCH, New York, 1988. x, 441 pp., illus. \$110.

**Alterations in the Neuronal Cytoskeleton in Alzheimer Disease.** George Perry, Ed. Plenum, New York, 1987. x, 229 pp., illus. \$49.50. *Advances in Behavioral Biology*, vol. 34. From a symposium, Washington, DC, Dec. 1986.

**Alternatives to Animal Use in Research, Testing, and Education.** Office of Technology Assessment, Congress of the United States. Dekker, New York, 1988. x, 441 pp., illus. \$59.75.

**The American Jury on Trial.** Psychological Perspectives. Saul M. Kassir and Lawrence S. Wrightsman. Hemisphere, New York, 1988. xiv, 232 pp. \$39.50; paper, \$18.95.

**Biological Psychology.** Daniel P. Kimble. Holt, Rinehart and Winston, New York, 1988. xiv, 482 pp., illus. \$36.25.

**The Biology of Behavior and Mind.** Bruce Bridgman. Wiley, New York, 1988. xii, 547 pp., illus. \$42.50.

**Flow Injection Analysis.** Jaromír Růžicka and Edo Harald Hansen, 2nd ed. Wiley-Interscience, New York, 1988. xxii, 498 pp., illus. \$75. *Chemical Analysis*, vol. 62.

**The General and the Bomb.** A Biography of General Leslie R. Groves, Director of the Manhattan Project. William Lawren. Dodd, Mead, New York, 1988. xii, 324 pp. \$21.95.

**Genetic Basis of Autoimmune Disease.** J. M. Cruse and R. E. Lewis, Jr., Eds. Karger, Basel, 1988. viii, 202 pp., illus. \$113.50. *Concepts in Immunopathology*, vol. 5.

**HIV and Other Highly Pathogenic Viruses.** Roberts A. Smith, Ed. Academic Press, San Diego, CA, 1988. x, 135 pp., illus. \$24.50. From a conference, Newport Beach, CA, Jan. 1987.

**Human Motivation.** David C. McClelland. Cambridge University Press, New York, 1988. xii, 663 pp., illus. \$25.95. Reprint, 1985 edition.

**Illustrated Genera of Smut Fungi.** Kálmán Vánky. Fischer, Stuttgart, 1987 (U.S. distributor, VCH, New York). viii, 158 pp., illus. Paper, \$40. *Cryptogamic Studies*, vol. 1.

**Laser Optics of Condensed Matter.** Joseph L. Birman, Herman Z. Cummins, and A. A. Kaplyanski, Eds. Plenum, New York, 1988. xiv, 564 pp., illus. \$97.50. From a symposium, Leningrad, U.S.S.R., June 1987.

**Noncommutative Noetherian Rings.** J. C. McConnell and J. C. Robson, with L. W. Small. Wiley-Interscience, New York, 1988. xvi, 596 pp. \$138. *Wiley Series in Pure and Applied Mathematics*.

**Pulse Methods in 1D and 2D Liquid-Phase NMR.** Wallace S. Brey, Ed. Academic Press, San Diego, CA, 1988. x, 561 pp., illus. \$90.

**Quality Assurance of Chemical Measurements.** John Keenan Taylor. Lewis, Chelsea, MI, 1987. xxii, 328 pp., illus. \$59.95.

**Radon and the Environment.** William J. Makofske and Michael R. Edelstein, Eds. Noyes, Park Ridge, NJ, 1988. xx, 465 pp., illus. \$39. From a conference, Mahwah, NJ, May 1988.

**The Response of Nuclei Under Extreme Conditions.** R. A. Broglia and G. F. Bertsch, Eds. Plenum, New York, 1988. x, 412 pp., illus. \$79.50. *Ettore Majorana International Science Series (Physical Sciences)*, vol. 28. From a course, Erice, Italy, Oct. 1986.

**The Science of Structures and Materials.** J. E. Gordon. Scientific American Books, New York, 1988 (distributor, Freeman, New York). x, 217 pp., illus. \$32.95. A Scientific American Library Book.

**The Scientific Companion.** Exploring the Physical World with Facts, Figures, and Formulas. Cesare Emiliani. Wiley, New York, 1988. xiv, 287 pp., illus. Paper, \$14.95. *Wiley Science Editions*.

**Semiconductors and Semimetals.** Vol. 24, Applications of Multiquantum Wells, Selective Doping, and Superlattices. Raymond Dingle, Ed. Academic Press, San Diego, CA, 1987. xii, 511 pp., illus. \$75.

**Shock Tubes and Waves.** Hans Grönig, Ed. VCH, New York, 1988. xviii, 952 pp., illus. \$125. From a symposium, Aachen, F.R.G., July 1987.

**Spacelab.** An International Success Story. Douglas R. Lord. National Aeronautics and Space Administration, Washington, DC, 1987 (available as NASA SP-487 from the Superintendent of Documents, Washington, DC). xvi, 554 pp., illus. \$33.

**Tasks, Errors and Mental Models.** A Festschrift to Celebrate the 60th Birthday of Professor Jens Rasmussen. L. P. Goodstein, H. B. Andersen, and S. E. Olsen, Taylor and Francis, Philadelphia, 1988. xiv, 342 pp., illus. \$77.

**Towards Better Carbohydrate Vaccines.** R. Bell and G. Torrigiani, Eds. Published for the World Health Organization by Wiley, New York, 1988. x, 363 pp., illus. \$77. From a meeting, Geneva, Switzerland, Oct. 1986.

**Trace Elements in Human and Animal Nutrition.** Vol. 1. Walter Mertz, Ed. 5th ed. Academic Press, San Diego, CA, 1987. xii, 480 pp., illus. \$69.

**Triangulated Categories in the Representation Theory of Finite Dimensional Algebras.** Dieter Happel. Cambridge University Press, New York, 1988. x, 208 pp., illus. Paper, \$24.95. *London Mathematical Society Lecture Note Series*, vol. 119.

**Uranus and Neptune.** The Distant Giants. Eric Burgess. Columbia University Press, New York, 1988. xii, 188 pp., illus. \$29.95.

**Vertebrate Endocrinology.** Fundamentals and Biomedical Implications. Vol. 2, Regulation of Water Electrolytes. Peter K. T. Pang, Martin P. Schreibman, and Wilbur H. Sawyer, Eds. Academic Press, San Diego, CA, 1987. xiv, 321 pp., illus. \$75.

**Western Civilization in Biological Perspective.** Patterns in Biohistory. Stephen Boyden. Clarendon (Oxford University Press), New York, 1987. xii, 370 pp., illus. \$60.

## Products & Materials

### Confocal Laser Scanning Microscope

The ILM11 is a confocal scanning laser illumination system for optical microscopes. It is designed for light imaging of transparent or slightly translucent materials, as well as rough surfaces. To improve resolution, the illumination system is designed to reject stray light. The specimen can be sectioned optically by isolating a plane at a specified depth of focus in the material. Lasertec U.S.A. Circle 492.

### Molecular Structure Analysis Workstation

The Stereochemical Workstation is a hardware-software system for geometric analysis and display of molecular structures. These structures can be displayed as ball-and-stick, thermal motion, space-filling, and cell-packing diagrams. The system can also create perspective displays and left-right and red-blue stereo plots. The user can interactively explore the plot layers of van der Waal surfaces with a mouse. Graphic analyses include the display of packing geometries of ionic compounds, the display of layers of reciprocal space, and the generation of posters that integrate text and molecular diagrams. Plots are output on a laser printer. The Stereochemical Workstation is compatible with the crystallographic data files generated by SHELX or SHELXTL structure-determination packages. Siemens Analytical X-Ray Instruments. Circle 495.

### Fetal Bovine Serum Substitute

CFBS is a serum with physical properties nearly the same as those of fetal bovine serum. CFBS is collected from calves less than one-day old; the blood chemistry at that age is almost the same as that of fetal calf, because colostrum has not yet been ingested. Greater standardization is possi-

ble, because the exact ages of the donors are known. CFBS is produced in accordance with the Food and Drug Administration's Current Good Manufacturing Practices and their In-Vitro Diagnostic Guidelines. \$350 to \$450/liter. Irvine Scientific. Circle 501.

### Automatic Microplate Washer

The EL403 is an automated washer that can wash 96-well microplates in 8 s. Plate loading is also automatic. The user programs wash and dispense cycles, which are



stored in memory. Aspiration channels are air-dried. Optionally, the EL403 can be outfitted with gravity-feed or variable-pressure delivery systems. Bio-Tek Instruments. Circle 497.

### Nucleic Acid Transfer System

MILLIBLOT-V transfers DNA or RNA samples from agarose gels onto membranes. Powered by a house vacuum or a water aspirator, MILLIBLOT-V can complete a transfer in 30 min. The system is compatible with all transfer membranes and with all agarose gels 20 cm by 20 cm or smaller. A graduated buffer collection trough allows the user to monitor the transfer. No sponge or filter paper stacking is necessary. Millipore. Circle 493.

### Statistics Software

MultiStat is a column-based software program for statistics. Data in any column can be transformed linearly or logarithmically (natural, base 10, or base 2 logarithms). Columns can also be sorted, ranked, or combined. The program can generate random numbers from uniform, normal, Poisson, and exponential distributions, and it can calculate square roots, cube roots, reciprocals, absolute values, sines, cosines, and tangents. MultiStat performs both descrip-

tive and analytic statistics. Descriptive statistics functions include maximum, minimum, range, median, sum, arithmetic mean, geometric mean, average deviation, standard deviation, standard variance, skewness, and kurtosis. Both parametric and nonparametric analytic functions are included: Student's *t* test, linear regression and correlation, analysis of variance, chi square, Fisher's exact test, McNemar's test, Wilcoxon's signed ranks test, Mann-Whitney *U* test, Kolmogorov-Smirnov test, and rank correlation procedures. Data can be displayed as histograms, bar graphs, line graphs, pie charts, or scatter graphs. MultiStat operates on Apple Macintosh Plus, SE, or II computers. \$250. Biosoft. Circle 504.

### Ultrafiltration Cassettes

Ultrafiltration cassettes are available for tangential parallel flow cassette systems. The membrane is made of polyethersulfone and is available steam-sterilizable, with low protein binding, or with anti-foam properties. The smallest molecular size cut-off offered is 1000 daltons; the largest molecular size cut-off is 1,000,000 daltons. Filtron Technology. Circle 503.

### Literature

*Focus on Applications: Technical Bulletin 8020-1* describes the characteristics of avian myeloblastosis virus reverse transcriptase and gives a protocol for preparing first-strand DNA with it. Bethesda Research Laboratories. Circle 509.

*IonPac Columns* is a brochure about columns that separate ionic and polar compounds by ion-exchange chromatography. Dionex. Circle 510.

The *M200 Microsensor Gas Analyzer* product brochure describes a dual gas chromatograph. Microsensor Technology. Circle 511.

The *SLL Series* brochure provides information on five models of tunable dye lasers, four of which are suitable for ultraviolet generation. Candela Laser. Circle 512.

The *Bluebook of Electron Microscopy* is a 165-page catalog of tools, grids, specimen mounts, preparation supplies, immunological products, vacuum equipment, and other supplies for electron microscopy. Ladd Research Industries. Circle 513.

*Introducing the FIA-PUMP 1000* is a product brochure featuring a programmable peristaltic laboratory pump. FIATron Laboratory Systems. Circle 514.

*Catalog 611* lists analytical evaporators, extractors, and accessories. Organomation Associates. Circle 517.

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

# Personnel Placement

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

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

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

**LINE CLASSIFIED (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth):** \$38.00 per line; \$380 minimum, per week (minimum charge covers one inch on a single column; one inch equals 10 lines of 52 characters and spaces per line). No charge for use of box number. No agency commission for ads less than 4 inches. No cash discount. Prepayment required for all foreign ads. Purchase orders and/or cover letter including billing address required for all other advertising.

**To ESTIMATE ad cost:**  
Structure ad copy on a separate page, on lines of 52 characters and spaces. Include any desired heading. Each line of heading, and/or extra line spaces, and all partial lines (including centered reply information) are counted as full lines. Ad titles located within the text are printed in boldface caps and are only 32 characters per line. In ESTIMATING the cost, multiply total lines  $\times$  \$38.00 = approximate cost of ad. (This is an approximate cost ONLY: Allow for variation between estimated lines and actual typeset lines and the resulting final cost. Purchase orders must allow for some degree of flexibility and/or adjustment.)

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

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

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

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

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

Blind ad replies should be addressed as follows:

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

## POSITIONS WANTED

**Magnetic Resonance Imaging/Spectroscopist.** Ph.D. seeks position in clinical applications/research and development of NMR Imaging and human in vivo spectroscopy. Considerable experience in MRI and 2DFT NMR spectroscopy. Currently, working with GE 1.5T Signa System. As MRI/MRS researcher, gained considerable knowledge of GE Signa System Software PPL (Pulse Programmer language), Pulse Sequences Databases, and Scanner Operation. Prior experience with Picker-Scanner System Software and Operation and implemented clinically useful New Pulse Sequences on the Whole-Body MR Imager. Box 139, **SCIENCE**.

**Ph.D. Analytical biochemist/microbiologist/immunologist** solid experience with GC-MS, ECN, FID, methods development, LC, PAGE. Seeks industrial, academic position. Box 138, **SCIENCE**.

## POSITIONS WANTED

**Neurobiologist, Nutritionist, Ph.D.** Developmental research on cortical and neuron anatomy, synaptosomal GABA, GAD levels. Experience with brain tissue staining and embedding techniques, microtomy, small animal surgery, enzyme assays, HPLC. Seeks position in teaching/research, university/industry/government. 2921 Dwight Way #12C, Berkeley, CA 94720. Telephone: 415-540-7533.

**Toxicologist,** recent M.S. from St. John's University. Experienced in mammalian cell culture, spectrophotometric analyses, histochemical and immunohistochemical staining techniques and electron microscopy. Also familiar with thin layer and column chromatography and the use of radio-isotopes. Seeking position in west central Florida. P.O. Box 1619, Elfers, FL 34680-1619.

**Translation from Japanese** publications, patents, and technical reports. P.O.B. 211063, Columbus, OH 43221.

## POSITIONS OPEN

### ANIMAL ECOLOGIST ENDOWED CHAIR IN VETERINARY MEDICINE

**ANIMAL ECOLOGIST** is sought with experience preferably in domestic animal species and their interaction with humans for a tenure-track faculty position and an endowed chair in the School of Veterinary Medicine, University of Pennsylvania. Additional background may include ethical issues, the use of animals, and insight into the ethical belief system of the veterinary profession. Candidates should have credentials of innovation and academic leadership. Address inquiries to:

**Dr. K. C. Bovee, Chairman**  
Moore Chair Search Committee  
School of Veterinary Medicine  
University of Pennsylvania  
3850 Spruce Street  
Philadelphia, PA 19104-6010

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

**ASSISTANT PROFESSOR,** Department of Physiological Chemistry, University of Wisconsin-Madison. An assistant professor position will be available on 1 July 1989 for a person with strong biochemical research and teaching interests. The abilities of the applicant are more important than the particular area of research interest. Department faculty have active basic and applied research programs in molecular biology, developmental biology, hormones, protein chemistry, membranes, lipids and metabolism, as well as teaching responsibilities for graduate, medical, and health science students. Applications should have at least 2 years of biochemical postdoctoral research experience. They should submit curriculum vitae, bibliography, letters of reference from three people knowledgeable of the candidates research or teaching abilities, and a one- or two-page statement of future research interests to: **Dr. James E. Dahlberg, Chairman** Faculty Search Committee, 587 Medical Sciences Building, 1300 University Avenue, Madison, WI 53706, by 1 November 1988. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

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

The Department of Biochemistry at the University of Illinois invites applications for a tenure-track faculty position which will be available starting in August, 1989. Salary is dependent upon qualifications. Candidates must have demonstrated exceptional research ability in dynamic areas of biochemistry or molecular biology, and must be prepared to establish an independent research program and to contribute to graduate and undergraduate teaching programs. A Ph.D. and postdoctoral experience in biochemistry or a related field are required. For full consideration, applicants should submit curriculum vitae, a brief description of their research interests, and three letters of reference by 1 November 1988 to: **Professor Richard I. Gumpert, Chairman, The Biochemistry Search Committee, Department of Biochemistry, University of Illinois, 1209 West California Street, Urbana, IL 61801. Telephone: 217-333-2013.**

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

## POSITIONS OPEN

**ASSISTANT PROFESSOR:** Applications are invited for a position at the level of assistant professor (tenure-track) in the Department of Chemistry at Stanford University, with primary research and teaching interests in the general area of organic or inorganic chemistry. Applicants must be strongly motivated toward creative research and have a commitment to teaching at the undergraduate and graduate levels. In applying, please send curriculum vitae, list of publications, a brief statement of research interests (three pages or less) and, in addition, have three letters of recommendation sent to: **Professor John Ross, Chairman, Department of Chemistry, Stanford University, Stanford, CA 94305.** *Stanford is committed to Equal Opportunity through Affirmative Action in Employment, and we are especially eager to identify minority persons and women with appropriate qualifications.* Applications should be received by 1 November 1988.

**ASSISTANT PROFESSOR,** non-tenure track. The Virginia Institute of Marine Science (VIMS), School of Marine Science, College of William and Mary, is seeking a Ph.D. with experience in aquatic (preferably marine or estuarine) pathology and toxicology. Applicant must be willing to work with a team on the fate and effect of toxic chemicals in aquatic environments. *Women and minority scientists are encouraged to apply.* Send three references and vitae by 16 September 1988 to: **Professor M. E. Bender, Search Committee, VIMS, Gloucester Point, VA 23062.** *Equal Opportunity/Affirmative Action Employer.*

The Department of Chemistry of The University of Chicago invites applications from outstanding individuals for **ASSISTANT PROFESSOR** (tenure-track) faculty positions in inorganic, organic, physical, and polymer chemistry. Postdoctoral experience is preferred. Applicants should submit curriculum vitae, a list of publications, a succinct outline of their research plans and should arrange for three letters of recommendation to be sent to: **Graham R. Fleming, Chairman, Department of Chemistry, The University of Chicago, 5735 South Ellis Avenue, Chicago, IL 60637.** *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR/INSTRUCTOR/POSTDOCTORAL FELLOW** to join Immunogenetics Laboratory with interest/experience in HLA and/or lymphokine receptors. Background in immunology, cellular immunology, and/or molecular biology useful. Send curriculum vitae and bibliography to: **Dr. Nicole Suciu-Foca, College of Physicians & Surgeons of Columbia University, Department of Pathology, P&S 14-403, 630 West 168th Street, New York, NY 10032.**

### ASSISTANT PROFESSOR (STEP I-III) MOLECULAR CELL BIOLOGY

The Biology Department at the University of California, Santa Cruz, invites applications for a tenure-track faculty position in molecular cell biology effective fall 1989. Ph.D. required. Preference given to applicants using molecular approaches to study basic problems in cell biology in areas such as (i) neurobiology and neurogenetics, (ii) developmental biology, and (iii) structure and function of cell membranes. The department is expanding, with expectation of new buildings, faculty, and resources. *Applications from women and ethnic minorities are strongly encouraged.*

Submit curriculum vitae, a brief description of research plans, reprints, and letters of reference submitted by three referees to: **Chair, Molecular Cell Biology Search Committee, Department of Biology, Thimann Laboratories, University of California, Santa Cruz, CA 95064** by no later than 1 December 1988. Refer to provision #127-889 in your reply. *UCSC is an Equal Employment Opportunity/Affirmative Action/IRCA Employer.*

**ASSISTANT PROFESSOR, NUTRITION.** Tenure-track for fall 1989. Doctorate or ABD required. College teaching and publication record preferred. Salary negotiable. Send résumé to: **Lorraine Dorfman, Department of Home Economics, University of Iowa, Iowa City, IA 52242.** *Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR (STEP I-III) POPULATION GENETICS

The Biology Department at the University of California, Santa Cruz, invites application for a tenure-track faculty position in population genetics effective fall 1989. Ph.D. required. We seek a biologist that will apply modern experimental techniques to population and evolutionary problems, maintain an active research program and teach population genetics. The department is expanding, with expectation of new buildings, faculty, and resources. *Applications from women and ethnic minorities are strongly encouraged.*

Submit curriculum vitae, a brief description of research plans, reprints, and letters of reference submitted by three referees to: **Chair, Population Genetics Search Committee, Department of Biology, Thimann Laboratories, University of California, Santa Cruz, CA 95064** by no later than 1 December 1988. Refer to provision #126-889 in your reply. *UCSC is an Equal Employment Opportunity/Affirmative Action/IRCA Employer.*

**ASSISTANT PROFESSOR OF SURGERY.** Responsible for research in animal models of whole pancreatic and isolated islet transplantation designed to overcome rejection and autoimmune islet destruction with an ultimate goal of developing a total endocrine replacement therapy for insulin dependent diabetics. Training in microvascular surgery required. Responsibilities include clinical and surgical care of patients with organ failure undergoing kidney, pancreatic and liver transplantation; supervision of interns and residents in surgery wards and operating rooms; and classroom teaching and lecturing in surgery. M.D. with certification by the American Board of Surgery, at least 5 years of postgraduate medical training, completion of a fellowship in transplantation surgery with experience in renal transplants required. Training and experience can be concurrent. Send résumés to: **Dr. Mark B. Adams, Director, Transplant Program, Medical College of Wisconsin, Froedtert Memorial Lutheran Hospital, 9200 West Wisconsin Avenue, Milwaukee, WI 53226.** *Equal Opportunity Employer M/F/H.*

### ASSISTANT/ASSOCIATE PROFESSOR CARDIOPULMONARY PHYSIOLOGY

The Department of Physiology, Wayne State University of Medicine, is inviting applications for the position of tenure-track assistant/associate professor in the area of cardiopulmonary physiology. Preference will be given to candidates with a strong background and research interest in cardio-respiratory physiology. The successful candidate will be expected to establish an independent research program supported by extramural funding. Teaching responsibilities include the training of graduate students, and participation in departmental classes for medical and allied health students. Applicants to be considered for associate professor must have a significant publication record and extramural funding. *Minority candidates are encouraged to apply.* Salary will be commensurate with qualifications and experience. Send curriculum vitae, a description of research interests, and the names of three references to: **Dr. J. W. Phillis, Chairman, Department of Physiology, School of Medicine, Wayne State University, 540 East Canfield, Detroit, MI 48201,** by 30 November 1988.

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

**ASSOCIATE PROFESSOR—PHARMACOLOGY AND NUTRITION.** Tenure-track position open 1 July 1988. Candidate must have extensive experience in hormone pharmacology and physiology and a strong publication record. Experience with insulin physiology is preferred. Candidate required to teach in both medical and graduate pharmacology and nutrition programs. Applicant should send curriculum vitae, bibliography, significant reprints, a statement of research plans, and three names for reference purposes to: **Samuel P. Bessman, M.D., Professor and Chairman, Department of Pharmacology and Nutrition, University of Southern California, School of Medicine, MMR 512, Los Angeles, CA 90033.** Applications will be considered until the position is filled. *The University of Southern California is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR— TENURE TRACK

The Department of Anatomy and Cell Biology at Georgetown University, School of Medicine, is searching for an individual with expertise in HIV molecular biology. The applicants should have a Ph.D. or an M.D. and at least 2 years of postdoctoral training working with HIV. The individual chosen will be expected to join a group of scientists working on the mechanism of HIV transmission in the reproductive tract and, as well, establish a strong independently funded research program. Applicants should submit curriculum vitae, the names of three referees, reprints of representative publications, and a brief statement of research interests to:

**Dr. Martin Dym, Chairman  
Department of Anatomy and Cell Biology  
School of Medicine  
Georgetown University  
3900 Reservoir Road, N.W.  
Washington, D.C. 20007**

Deadline for application receipt is: 1 October 1988.  
*Georgetown University is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT RESEARCH BIOCHEMIST—**A research position to study regulatory aspects of enzymes of cellular and plasma lipid metabolism, using molecular and cellular biology techniques. Applicants must have a Ph.D. degree with proven skills in the analysis of gene regulatory sequences, and modern sequencing procedures. Experience in the design of mutagenesis experiments an advantage. Please send curriculum vitae, copies of recent publications and three letters of recommendation to: **Lipid Search Committee, Box 0130, University of California, San Francisco, CA 94143.** *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT/ASSOCIATE PROFESSOR.** The Departments of Neuroscience and Neurological Surgery at the University of Florida College of Medicine are seeking to fill a tenure-track position with an anticipated starting date of 1 March 1989. The focus of this search is for an individual with research interests that could integrate with our Spinal Cord Injury and Regeneration Program which presently emphasizes neural tissue transplantation, neuroanatomy, electrophysiology, and behavior (i.e., psychophysics). Applications are being sought from individuals with complementary expertise (e.g., in neuropharmacology of spinal cord function, identification and expression of trophic and/or tropic factors in the injured CNS, or neuroimmunology). The successful candidate will be expected to establish an independent research program and to participate in teaching medical and graduate courses. We encourage applications from persons having a Ph.D. and/or M.D. degree and a minimum of 2 years of postdoctoral experience.

Persons interested in applying for this position should send their curriculum vitae, a brief overview of present and future research directions, and the names, addresses, and telephone numbers of four references by 1 October 1988 to: **Dr. Paul J. Reier, Department of Neurological Surgery, University of Florida College of Medicine, JHM Health Center, Box J-265, Gainesville, FL 32610-0265.**

*The University of Florida is an Affirmative Action and Equal Opportunity Employer.*

**ASSOCIATE RESEARCH SCIENTIST/SCHOLAR OR STAFF ASSOCIATE** position immediately available in the Orthopaedic Research Laboratory (ORL) at Columbia University. Minimum requirement is a Ph.D. in biomechanics or biomedical engineering, or M.S. with 2 years of experience. Emphasis is placed on soft tissue biomechanics and orthopaedic research. Responsibilities include: manager for material testing section of ORL, supervision of experimental research for graduate students and resident research fellows, and independent or interdisciplinary collaborative project development. Highly competitive starting salary commensurate with experience. Please contact and send curriculum vitae to: **Van C. Mow, Ph.D., Director, Orthopaedic Research Laboratory, Columbia-Presbyterian Medical Center, 630 West 168th Street, New York, NY 10032.** Telephone: 212-305-1515.

## POSITIONS OPEN

**ASSISTANT PROFESSOR, ORGANIC CHEMISTRY.** Syracuse University invites applications for a full-time, tenure-track appointment to begin in September, 1989. All areas of research in organic chemistry, including organometallic and bioorganic chemistry, will be considered; candidates with research interests which complement those of present organic faculty members are especially encouraged to apply. The Chemistry Department is undergoing rapid growth and development, with the recent appointment of new faculty at the junior and senior levels, the addition of major research instrumentation and the relocation of our research facilities to the new Science and Technology Center, a move that will substantially increase both the quantity and quality of the department's research space and provide for our continued expansion. The successful applicant may anticipate strong departmental support in the development of an outstanding research program, and will have unique opportunities for collaborative and interdisciplinary investigation. Applicants should send curriculum vitae, publication list, and a description of research plans, and have three letters of recommendation sent to: **James Kallmerten, Chairman, Organic Search Committee, Department of Chemistry, Syracuse University, Syracuse, NY 13244-1200** by 15 October 1988. *Syracuse University is an Equal Opportunity/Affirmative Action Employer.*

The Department of Cancer Biology at the Harvard School of Public Health is seeking applications for a position of **ASSISTANT OR ASSOCIATE PROFESSOR OF IMMUNOLOGY.** The position will be in the section of virology, immunology, and molecular biology. The successful candidates should have training in molecular genetic technology, preferably as it applies to the immune system and an interest in pursuing molecular immunology research.

Each candidate would be expected to develop a strong research program and assume teaching responsibilities in one or more graduate level courses. Supervision of doctoral candidates will also be expected. A doctoral degree with 2 to 3 years of postdoctoral research experience is required with demonstrated evidence of innovative research capability.

Interested candidates should send curriculum vitae with a complete bibliography, representative reprints, a description of research and teaching interests, and the names and addresses of three references to: **Dr. Laurie H. Glimcher, Harvard School of Public Health, 665 Huntington Avenue, Boston, MA 02115.**

*Harvard University is committed to increasing representation of women and minority members among its faculty and particularly encourages applications from such candidates.*

**BIOCHEMISTRY,** University of Wisconsin-Eau Claire. Ph.D. preferred for probationary faculty position at rank of **ASSISTANT PROFESSOR** to begin 16 January 1989. Duties include teaching in biochemistry and general chemistry, advanced biochemistry and lab and undergraduate research. Send application, résumé, transcripts, summary of proposed research, and three letters of recommendation to: **Dr. M. E. Gleiter, Chairman, Department of Chemistry, UW-Eau Claire, Eau Claire, WI, 54702** by 30 September 1988, or until filled. *UW-Eau Claire is an Equal Employment Opportunity/Affirmative Action.*

### BIOCHEMISTRY/MOLECULAR BIOLOGY MEHARRY MEDICAL COLLEGE

Three faculty positions are available in the Department of Biochemistry at the level of **ASSISTANT OR ASSOCIATE PROFESSOR** for well-trained or experienced candidates in biochemistry and molecular biology. The Department expects to fill these positions in 1989. Successful applicants will be expected to develop and maintain a funded research program of high quality and to participate in the graduate and professional (medical, dental and allied health) school teaching programs of the Department. Applicants should send curriculum vitae, names of four individuals who may be contacted for reference, and a summary of potential research projects to: **Ifeanyi J. Arinze, Ph.D., Chairman, Department of Biochemistry, Meharry Medical College, Nashville, TN 37208.**

## POSITIONS OPEN

### BIOCHEMISTRY FACULTY POSITIONS

The Department of Biochemistry at the University of Tennessee, Memphis invites applications for several tenure-track positions at all academic ranks. Postdoctoral experience is required. Candidates with research interests in all areas of modern biochemistry are encouraged to apply. Applicants will be expected to perform independent research, obtain extramural funding, and participate in the teaching of biochemistry to professional and graduate students. Salaries and start-up funds will be competitive. The University of Tennessee, Memphis is located within one of the largest Health Science Centers in the United States and is in a major growth phase. Part of this growth includes newly renovated laboratory space for all faculty. Applicants should send curriculum vitae, summary of research plans, three letters of recommendation, and three most significant representative reprints to:

**John N. Fain, Ph.D.**  
Van Vleet Professor and Chairman  
Department of Biochemistry, College of Medicine  
University of Tennessee, Memphis  
800 Madison Avenue, Memphis, TN 38163  
Attention: Cheryl M. Colson

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

### CARDIOLOGISTS, INTERNAL MEDICINE—

The University of California, Davis, School of Medicine is recruiting for one full-time faculty position at the assistant/associate or full professor level. Candidate must be Board-certified or eligible in internal medicine and its subspecialty of cardiovascular diseases and be eligible for licensure in California. A clinical and research interest in coronary angioplasty, electrophysiology, intensive care unit, NMR or in basic research in the areas of cellular biochemistry, or molecular biology is preferred. Responsibilities include clinical care, teaching of medical students, residents and fellows, and a commitment to basic and/or clinical investigation. Letters of interest, including a complete curriculum vitae, should be forwarded to: **Zak Vera, M.D., Chair, Cardiology Search Committee, Room 2040, Professional Building, 4301 X Street, Sacramento, CA 95617.** Position open until filled—applications will not be accepted after 1 December 1988. *UCD is an Equal Opportunity/Affirmative Action Employer.*

### CELL BIOLOGIST MCGILL UNIVERSITY

The Department of Biology invites applications for a tenure-track position at the assistant professor level, effective 1 September 1989, or earlier. We seek a cell biologist using molecular and/or genetic approaches to study cell structure and function.

Send curriculum vitae, statement of research interests and goals, representative reprints, and three letters of reference to: **Dr. Barid Mukherjee, Chairman, Department of Biology, McGill University, 1205 Avenue Docteur Penfield, Montreal, Quebec, Canada H3A 1B1.** Deadline: 15 October 1988.

**Animal Medicine—CLINICAL DIRECTOR:** Stanford University's division of laboratory animal medicine is currently recruiting for the following position: The Clinical Director will be responsible for the veterinary care of animals in the Stanford University research animal colonies. This person will supervise an animal health care staff consisting of veterinarians and veterinary nurses involved in a 24-hour on-site animal care program; direct the operation of a major surgical, intensive care, pharmacy and radiology facility located in the centralized animal facility; establish and maintain animal health care programs, including quarantine services; consult with research personnel on the proper care and use of animals; assist in the development and teaching of courses and seminars; participate in collaborative and/or independent research; and serve as an advisor to the Administrative Panel on Laboratory Animal Care. Qualifications include the requirement of a degree in Veterinary Medicine from an AVMA accredited institution and Board Certification in Laboratory Animal Medicine, Internal Medicine, Surgery or other clinical specialty. An interest in an ability to conduct research as evidenced by publications in peer reviewed journals and/or postgraduate degrees is desirable. Résumé to: **Department JEF, JOB #51284-SM Stanford University Personnel Services, Old Pavilion, Stanford, CA 94305-6110.** *An Equal Opportunity Employer through Affirmative Action.*

## POSITIONS OPEN

**CHAIR, DEPARTMENT OF PATHOBIOLOGY,** School of Veterinary Medicine, The University of Pennsylvania. The University is seeking a highly qualified individual to provide leadership for the Department of Pathobiology. This department includes twenty-one full-time faculty and encompasses the teaching, research and service activities of the Laboratories of Avian Medicine, Microbiology, Parasitology, and Pathology in the School of Veterinary Medicine. Candidates should have experience in administration, a commitment to excellence in teaching, and a strong research program in molecular biology. A degree in veterinary medicine is desirable, but not essential.

Nominations and applications should be sent to: **Dr. Alan M. Kelly, School of Veterinary Medicine, University of Pennsylvania, 3800 Spruce Street, Philadelphia, PA 19104-6051.**

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

### CHAIR, DEPARTMENT OF PHYSIOLOGY DARTMOUTH MEDICAL SCHOOL

Applications or nominations are invited for the Chair of the Department of Physiology at Dartmouth Medical School. An excellent opportunity exists for an individual to guide a department with established strengths in renal, respiratory and endocrine physiology. In particular, the committee seeks an individual who will continue the tradition of excellence in research and teaching established by the previous Chairs. Equally important, the new Chair must maintain strong interpersonal and democratic relationships, while, at the same time, guide the department in an increasingly competitive and changing scientific climate.

Candidates should have proven leadership ability and must be nationally recognized for their scientific contributions in physiology or a closely allied field. Responsibilities include administration of professional and graduate teaching and of research programs within the department. Active support of interdisciplinary programs is also expected.

Each application should be accompanied by curriculum vitae and the names of four references. Deadline for submission is 1 November 1988. Applications and nominations should be addressed to: **Dr. Michael W. Fanger, Department of Microbiology, Dartmouth Medical School, Hanover, NH 03756.** *Dartmouth is an Equal Opportunity/Affirmative Action Employer.*

### MOLECULAR ONCOLOGY, INC. CLINICAL DIRECTOR

We are seeking an outstanding anatomic pathologist with combined research and management skills to lead a staff of scientists, postdoctoral workers and technicians. Molecular Oncology, Inc. is a rapidly growing biotechnology company that has developed new approaches to molecular pathology. The clinical director will interact with a research team and will be responsible for overseeing the development and clinical application of a panel of new molecular markers useful in cancer diagnosis and prognosis.

The successful candidate will have proven research record in applied surgical pathology research. Experience and knowledge in the areas of cancer pathology, immunohistochemistry, in situ hybridization, hormone receptor analysis and fluorescent activated cell analysis is desirable.

If you are an ambitious, innovative, first class, Board-certified pathologist, and capable of working a fast pace in a challenging and creative environment, please submit your curriculum vitae and references to: **Human Resources, Molecular Oncology, Inc., 19 Firstfield Road, Gaithersburg, MD 20878.** *We are an Equal Opportunity Employer.*

**CLINICAL RESEARCH ASSOCIATE** position with major U.S. drug company for Ph.D. Pharmacology with postdoctorate, Pharm.D., Ph.D. Micro or M.S. with publications. Prefer experience in cardiovascular pharmacology, good general pharmacology experience or infectious diseases. Must be personable, ambitious, and able to meet deadlines. U.S. travel 20% to 40%. Prior industry clinical research experience a plus. Excellent pay and career path. Send replies to: **James Sinclair, Box 313, Ramsey, NJ 07446.**

## POSITIONS OPEN

**DEAN OF RESEARCH.** The National College of Chiropractic seeks a Dean of Research responsible for overseeing its entire research program, and chairing the Department of Research to which there are currently assigned six full-time faculty, one part-time faculty, one research assistant, a secretary, three fellows, and fourteen student assistants. Appointee must possess a first professional degree in a health science, or an earned doctoral degree (preferably a Ph.D.) in a biological science, and have no less than 7 years of experience in an academic, professional, or research setting with a record of sound research in a health related area. Managerial ability is essential. Salary will depend upon qualifications. Letter of application, resume, and the names of no less than five referees should be sent no later than 31 October 1988, to:

**Jacob Fisher, Ph.D., Chairman**  
Search Committee for Dean of Research  
The National College of Chiropractic  
200 East Roosevelt Road  
Lombard, IL 60148

### DEVELOPMENTAL PSYCHOLOGIST

The Department of Psychology, University of Rochester, anticipates filling a tenure-track position in developmental psychology for the 1989 to 1990 academic year. Candidates may have research interests in any area of development. The ability to establish and maintain an independent and outstanding program of research and to make major contributions to both undergraduate and graduate teaching are key considerations. Although the appointment is at the junior level, individuals at more senior levels will also be considered. *Women and minority candidates are particularly encouraged to apply.* Send curriculum vitae, statement of research interests, and three letters of recommendation to: **Dr. Elissa L. Newport, Development Search Committee, Department of Psychology, University of Rochester, Meliora Hall—River Campus, Rochester, NY 14627.** Deadline for receipt of application materials is 1 December 1988. *The University of Rochester is an Equal Opportunity/Affirmative Action Employer.*

**DIVISION DIRECTOR—CLINICAL PHARMACOLOGY:** Applications are invited for the position of Director, Division of Clinical Pharmacology in the Department of Internal Medicine, The University of Iowa College of Medicine. Candidates should have an outstanding record in academic clinical pharmacology and be dedicated to providing leadership in teaching, specialized patient care, and research. Applications will be received until the position is filled and should be sent to: **Richard Wenzel, M.D., Chair, Search Committee, Department of Internal Medicine, The University of Iowa College of Medicine, Room C41-S General Hospital, Iowa City, IA 52242.**

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

**ECONOMIST/FAMILY ECONOMIST:** Research Leader of the Family Economics Research Group (FERG), GM-0493-14

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

The position includes managing, developing, and performing research on the economic well-being of families and households, with the aim of determining how they acquire, allocate, and manage financial and other resources under varying economic and social conditions, and the interaction of financial behavior with the Nation's economy. Research products of FERG include the quarterly periodical Family Economics Review, special workbooks on managing personal finance, annual estimates of cost of raising a child, and research papers in the scholarly journals of economics and family economics. *U.S. citizenship is required.* Beginning salary is \$46,679 per annum. Call: **Dr. Helene N. Guttman on 1-301-436-8461** for position information. Send application (SF-171) and transcript to: **James Lynch, Agricultural Research Service, Personnel Operations Branch, Building 003, Room 415, BARC-West, Beltsville, MD 20705,** or call: 1-301-344-3954. Applications must be marked 8E016. Deadline for receipt of applications is 16 September 1988. *ARS is an Equal Opportunity Employer.*



## Executive Director California Academy of Sciences San Francisco

The Academy, the natural history museum, aquarium, and planetarium complex in San Francisco's Golden Gate Park, is seeking an Executive Director. The Academy has a broadly defined mission in research, public education, and exhibition with a staff of 250, including 85 professionals, and serves more than 1.5 million visitors annually. Continued strong and creative leadership is required to bring to completion the ambitious, funded program of modernization and expansion now underway.

The Director will report to the Academy's Board of Trustees and be responsible for providing executive leadership, administration, direction, and oversight for the institution's diverse activities. The Academy seeks an individual with proven qualities of leadership and successful management of complex organizations, abilities in fund-raising, excellent communication skills; he/she should share enthusiasm for science, and commitment to the kinds of research and public programs undertaken at the Academy. A scientific background is highly desirable.

A full salary and benefit package, including use of a home in San Francisco, will be provided.



Forward applications and nominations to Mr. John Grey, Chair of the Search Committee, The California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118. Applications will be kept confidential. For information, please contact Dolores Rogers, Personnel Manager, (415) 750-7212.

*Application closing date is Oct. 14, 1988.*



## ARGUS Pharmaceuticals, Inc.

### An Exciting Opportunity for a Research Scientist

#### The Company

ARGUS Pharmaceuticals (formerly The Macrophage Company, Inc.) is developing cytotoxic factors from macrophages and human monocytes for treatment of cancer and other infectious and rheumatic diseases.

The Company supports a team of scientists at The University of Texas M.D. Anderson Cancer Center who will use recombinant DNA and standard protein purification techniques to characterize and purify these factors.

#### Postdoctoral Position Available

Minimum two years experience in Hybridoma Methodology. Background in protein biochemistry and purification using HPLC techniques would be preferred. Expertise in production, purification and characterization of murine monoclonal antibodies is desired. The ideal candidate should be able to work as part of a research team and direct his or her efforts toward the purification and characterization of macrophage-derived proteins, production of specific monoclonal antibodies, and DNA cloning. These macrophage-derived proteins have potential for biological therapy of cancer.

Compensation will be commensurate with experience.

#### Your Commitment

Qualified persons with a background or interest in immunology and willing to make a two-year commitment to this exciting project should submit CV and references to:

Gabriel Lopez-Berestein, M.D.  
The University of Texas  
M.D. Anderson Cancer Center  
1515 Holcombe, Box 41  
Houston, Texas 77030  
(713) 792-8140

## 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**

## Toxicologist

Syntex has earned its reputation in the pharmaceutical industry for superior research — our research is thorough and our equipment is the most sophisticated available. We currently have an outstanding opportunity available for a Toxicologist to join us in our Palo Alto research headquarters.

You will be responsible for implementing, monitoring and reporting pre-clinical toxicology studies. These studies will be used to support national and international regulatory findings for new drug registrations. Strict adherence to established SOPs and GLPs required. You should possess a PhD in toxicology or related discipline and 0-3 years' post-doctoral training or industrial toxicology experience, preferably in a pharmaceutical or contract firm. Familiarity with regulatory requirements, good interpersonal and communication skills and the ability to work in a team structure essential.

Syntex, located on the San Francisco Peninsula, offers a competitive compensation and relocation package which includes an incentive bonus plan. For immediate consideration, please send your resume to: Syntex, Professional Staffing, Dept. KH/SC, 3401 Hillview Avenue, Palo Alto, CA 94304. We are an equal opportunity employer.



## POSITIONS OPEN

### DIRECTOR OF GROSS ANATOMY UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE

The University of Pittsburgh, School of Medicine is seeking a mature anatomist to coordinate the gross anatomy programs of the basic science and clinical departments. Duties will involve directing the first-year medical student course, coordinating the fourth-year surgical elective course, providing some instruction for resident programs, as required, overseeing and participating in surgical research and ensuring proper and efficient usage of cadavers. This is a newly created position in the tenure stream, designed to complement the strengths in investigative surgery at this institution. A primary appointment will be offered in the Department of Neurobiology, Anatomy and Cell Science, with a joint appointment in the Department of Surgery. Deadline for applications, 30 September 1988.

Please send curriculum vitae and names of three references to: **Gross Anatomy Search, c/o Raymond D. Lund, Department of Neurobiology, Anatomy and Cell Science, University of Pittsburgh, School of Medicine, Pittsburgh, PA 15261.** *The University is an Equal Opportunity/Affirmative Action Employer.*

### ENDOWED CHAIRS MOLECULAR GENETICS AND NEUROBIOLOGY EMORY UNIVERSITY SCHOOL OF MEDICINE

Emory University School of Medicine announces the creation of two endowed chairs: the Woodruff Professorship of Molecular Genetics and the Woodruff Professorship of Neurobiology. These chairs, established through the prestigious Woodruff Endowment, will be independent units reporting to the Dean of the School of Medicine and will be expected to provide university-wide leadership in the respective disciplines. Each chair will include additional vacant faculty positions and an initial 5,000 square feet of newly constructed laboratory space. Generous start-up funds and a highly competitive salary are included. Established investigators as well as those with unusual promise and a developing international reputation are encouraged to apply.

Submit applications or nominations to either the Woodruff Molecular Genetics Search Committee or the Woodruff Neurobiology Search Committee by 1 November 1988.

**Emory University School of Medicine  
Room 302, WHSCAB  
1440 Clifton Road, NE  
Atlanta, GA 30322**

*An Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITION DEPARTMENT OF ENGINEERING AND POLICY SCHOOL OF ENGINEERING AND APPLIED SCIENCE WASHINGTON UNIVERSITY, ST. LOUIS

The Department of Engineering and Policy at Washington University in St. Louis invites applications and nominations for a tenure-track faculty position, starting in spring or fall 1989. A doctoral degree in engineering or physical science and a demonstrated potential for external research support are required. Responsibilities include teaching graduate and undergraduate courses, supervising graduate student research, and developing a strong, externally-supported, research program. Specialization areas in the department include energy, environment, international development, public health, and science and technology policy at the domestic and international levels. Emerging areas include strategic management of technology and technological innovation, R&D management of technology and technological innovation, R&D management, and manufacturing engineering. Applicants who qualify for a senior-level appointment as the result of academic or recent industrial experience or government service are especially encouraged. Applications and nominations will be accepted until the position is filled. They should include the names, addresses, and telephone numbers of three references, and be sent to: **Dr. William P. Darby, Chairman, Department of Engineering and Policy, Campus Box 1106, Washington University, One Brookings Drive, St. Louis, MO 63130.** *Washington University is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**ENGINEER, CHEMICAL DESIGN, PROCESS**—Conduct research on analytical instruments used for chemical analysis. Emphasis on cold-on-column, programmed temperature evaporation injection techniques and gas chromatography. Assist in transfer of products from design stage to manufacturing and applications. Ph.D. in chemistry required. Must have knowledge of capillary gas chromatography, cold-on-column, programmed temperature evaporation injection techniques. Two years of experience in application chemistry in gas chromatography required. \$48,900 per year. Send résumé or curriculum vitae to: **Philadelphia Job Bank 444 North 3rd Street, 3rd Floor, Philadelphia, PA 19123. Refer to J.O. #4208433.**

**ENVIRONMENTAL TECHNOLOGY.** Immediate opening for an individual with research experience in applied biotechnology. Functions as supervisor of a small research group and independently conducts research. Formulates and conducts a systematic attack on such problems as abatement of acid mine drainage, geomicrobiological aspects of mineral extraction, and revegetation. Starting salary is \$33,218 to \$39,501 plus benefits. **HYDROGEOLOGY.** Immediate opening for an experienced researcher to investigate hydrogeological variables influencing the environmental effects of mining. Prefer B.S. plus 2 years of research experience or M.S. with thesis. Must have completed differential and integral calculus and physics. Education should also have included surface and ground water hydrology, hydrogeology, drainage basin analysis, ground water aspects of mining, aqueous geochemistry, and geophysical well logging and surveying. Starting salary is \$22,907 to \$27,716 plus benefits.

Applicants must be U.S. citizens. Send résumés and a copy of your transcripts to: **The U.S. Bureau of Mines, P.O. Box 18070, Cochran Mill Road, Pittsburgh, PA 15236. Attention: Personnel Office, Dan E. Diviney.** *The U.S. Bureau of Mines is an Equal Opportunity Employer.*

### EVOLUTIONARY GENETICIST

A tenure-track position at Washington State University is available at the level of assistant or associate professor beginning fall, 1989. Applications are invited especially from those using an experimental approach to major questions in evolutionary genetics of plants, animals, or species interactions. The appointment will be in an appropriate biological science department. There is particular interest in candidates whose research complements our faculty's research in molecular evolution and systematics; population, physiological, and evolutionary ecology; and population and ecological genetics, and who can teach population and quantitative genetics at the undergraduate and/or graduate level. Postdoctoral experience is preferred. Applicants should send curriculum vitae, a statement of current research and long-term research interests, and three letters of reference by 15 December 1988 to: **Dr. John N. Thompson, Evolutionary Geneticist Search Committee, Departments of Botany and Zoology, Washington State University, Pullman, WA 99164-4230.** *WSU is an Equal Opportunity/Affirmative Action Educator and Employer. Protected group members are encouraged to apply.*

### TWO FACULTY APPOINTMENTS BIOLOGY DEPARTMENT GEORGIA STATE UNIVERSITY

Applications are invited for two tenure-track positions in the following areas: (i) **Molecular Genetics**, (ii) **Immunology**. Appointments starting September 1989 at the assistant or associate professor levels with salaries commensurate with qualifications. Applicants at the assistant professor level must have demonstrated research potential through postdoctoral experience and research publications. Applicants at the associate professor level must have exceptional research credentials as evidenced by publications and extramural support. The successful candidates are expected to teach at the undergraduate and doctoral levels, and to maintain strong and competitively funded research programs. Send curriculum vitae, reprints, a statement of research plans, and three letters of reference to: **Dr. Ahmed Abdelal, Department of Biology, Georgia State University, Atlanta, GA 30303.** Screening of applicants will begin 1 November 1988 and will continue until suitable candidates are identified. *Georgia State University, a unit of the University System of Georgia, is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### EXPERIMENTAL AND CLINICAL PSYCHOLOGISTS

University of Guam announces two tenure-track positions: Experimental psychologist and clinical psychologist. Responsibilities: teaching, research, service. Should possess Ph.D. from accredited University with APA approved program. Desirable expertise: Experimental—marine animal behavior, comparative and physiological, psychology/psychobiology; Clinician—cross cultural experience, therapy, eligibility for licensure. Correspond to: **Dean, College of Arts and Sciences, University of Guam, Mangilao, Guam 96923.**

Carnegie Mellon is recruiting **FACULTY** for its department of Engineering and Public Policy (EPP). Positions involve 50/50 joint appointments with traditional engineering departments. Areas of research interest include technical and policy problems in telecommunications, network design and security, and reliable computing; technical issues in arms control and defense policy; manufacturing, industrial policy and design; and engineering and regulatory issues in biotechnology. Require Ph.D., preferably in engineering, and demonstrated policy skills. Résumé to: **Professor M. Granger Morgan, Head, EPP, Carnegie Mellon, Pittsburgh, PA 15213.**

### FACULTY POSITION, DEPARTMENT OF PATHOLOGY HARBOR-UCLA MEDICAL CENTER

Academically oriented gastrointestinal pathologist is sought for a full-time faculty position. Research experience and commitment is required. Opportunities for independent and collaborative research are available. The candidate must be Board-certified in anatomic pathology and will share service and teaching responsibilities with the rest of the anatomic pathology faculty. The position carries an academic appointment with the UCLA School of Medicine. Applicants please send curriculum vitae, a statement of research interests, and names and addresses of three references to: **Dr. L. Barajas, Chairman, Search Committee, Department of Pathology, Harbor—University of California Los Angeles Medical Center, 1000 West Carson Street, Torrance, CA 90509.**

### FACULTY POSITION IN ATMOSPHERIC TRANSPORT AND/OR AIR QUALITY

The Department of Civil Engineering at Stanford University is seeking a tenure-track assistant professor in the field of atmospheric transport and/or air quality engineering. The new professor will teach graduate courses and conduct research in one or more of the following areas: physical and chemical fundamentals of air quality; atmospheric transport of contaminants, including regional and global effects; the impact of air quality changes on human health and the environment; and air pollution control. In research, the candidate preferably should offer a balance of interest in experimental and computational work, with emphasis on understanding the relevant physical and chemical processes and their effects. The position is available as early as 1 September 1989. Send résumé, publication list, and names of references no later than 30 November 1988 to: **Professor Paul V. Roberts, Department of Civil Engineering, Stanford University, Stanford CA 94305-4020.** *Stanford is an Equal Opportunity/Affirmative Action Employer.*

### FACULTY POSITIONS, BIOMEDICAL ENGINEERING

The University of Southern California invites applications for two tenure-track faculty positions available 1 January 1989. Applicants must have a Ph.D. or an M.D. degree with experience in sensory physiology, biosensors, medical imaging, or laser applications in medicine. Duties include both teaching and research; appointees will be expected to establish his or her own research program. Rank and salary will be commensurate with qualifications.

Send résumé and the names of three references to:

**H. K. Chang, Chairman  
Department of Biomedical Engineering  
University of Southern California  
Los Angeles, CA 90089-1451**

*An Equal Opportunity/Affirmative Action Employer.*

**YASUKO HIRAOKA MYER  
RESEARCH FELLOWSHIP**

**CSIRO AUSTRALIA**

## **RESEARCH SCIENTIST**

**A\$30,100-\$A\$36,937**

**DIVISION OF PLANT INDUSTRY  
CANBERRA, ACT AUSTRALIA**

**The Division:** The CSIRO Division of Plant Industry conducts research on problems fundamental to plant biology and agricultural production. One of the research programs within the Division is concerned with the effects of the phytohormone abscisic acid on gene expression in dehydrating cereals, and the biological role of the new proteins which appear in dehydrated plants.

**The Job:** The appointee will investigate the structure and distribution of dehydration-induced proteins in a range of plant species (both desiccation-tolerant and intolerant), and conduct transformation experiments in plants aimed at establishing the function of dehydration-induced proteins.

**The Person:** Applicants should possess a PhD degree or equivalent qualification, and a proven research ability in biochemistry/molecular biology; a background in plant physiology and research experience with plant systems would be an advantage.

**Conditions:** Appointment will be for a term of three years with Australian Government Superannuation benefits available.

**More Information:** Prospective applicants are invited to telephone Dr Peter Chandler on 61 62 46 5251 for further information. A copy of the detailed duty statement and selection criteria may be obtained by telephoning 61 62 46 5357.

**Applications:** Applications should be submitted by 26 September 1988 and quote reference number MY001. They should be framed against the selection criteria, and should state relevant personal particulars including details of qualifications and experience. Applicants should nominate at least two professional referees, and address their applications to:

**The Chief  
CSIRO Division of Plant Industry  
GPO Box 1600  
Canberra, ACT 2601 AUSTRALIA**



CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER

ABI 88/071

**NATIONAL CANCER INSTITUTE**  
National Institutes of Health, Public Health Service

## **CANCER PREVENTION FELLOWSHIP PROGRAM (CPFP)**

The DIVISION OF CANCER PREVENTION AND CONTROL (DCPC) is accepting applications for the Cancer Prevention Fellowship Program (CPFP). The primary purpose of this program is to attract individuals from a multiplicity of health science disciplines into the field of cancer prevention and control research. The program provides for : participation in the DCPC Cancer Control Academic Program (a formal four-month course in cancer prevention and control); 20 months at NCI working directly with individual preceptors on ongoing cancer prevention and control projects; and, one year at a DCPC-approved cancer control program or State Health Department (may be optional). Funding permitting, up to 10 Fellows will be accepted for up to three years of training, beginning August 27, 1989.

### **APPLICANTS MUST (BY THE DEADLINE):**

1. Possess an M.D. or D.O. degree from a U.S., territorial, or Canadian medical school OR foreign medical graduates must have current ECFMG/FMGEMS certification and have completed one year residency in a training program approved by the Accreditation Council for Graduate Medical Education --OR-- Possess other accredited U.S., territorial, or Canadian doctoral degree (Ph.D., Dr. P.H., D.D.S., etc.) in a discipline related to cancer prevention and control research (biomedical, medical, nutritional, public health or behavioral sciences). Foreign doctoral graduates must provide documented evidence that the foreign education is comparable to doctoral education received in accredited institutions noted above;
2. Possess U.S. citizenship or be a resident alien eligible for citizenship within four years;
3. Complete and return the application packet by the deadline (including arranging for official academic transcripts and four current, original letters of reference to be sent directly by the academic institutions and referees to the CPFP Coordinator).

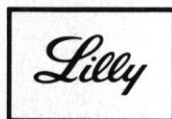
For questions concerning the program's scientific or administrative aspects, please contact Dr. Peter Greenwald or Mrs. Barbara Redding at (301) 496-8640. Application packets may be obtained by sending a POSTCARD with your name and home address to CPFP Coordinator, NIH/NCI/DCPC/CCAB, EXPS Terrace Level, 9000 Rockville Pike, Bethesda, MD 20892. Please do not send any material until after you have read the instructions in the application packet.

**DEADLINE FOR RECEIPT OF APPLICATIONS: JANUARY 11, 1989**

NIH is an Equal Opportunity Employer



## **BS/MS SCIENTIST** **Toxicology Division**



Equal Opportunity Employer

For more than a century, scientists at ELI LILLY AND COMPANY have developed innovative, high quality pharmaceutical products. In 1988, Lilly is investing over \$500 million in research-and-development programs. More than 3,000 scientists at the company's Lilly Research Laboratories and Biochemical Development Divisions are pursuing creative research programs that involve many important health care needs.

To further build its research capabilities, Lilly is seeking a self-motivated, innovative scientist for the Toxicology Division. The ideal candidate will have the following qualifications:

- Bachelor's or Master's degree in toxicology, pharmacology, or a related discipline.
- Experience in conducting toxicology studies with animal models.
- Excellent organizational and communication skills.

Eli Lilly and Company is committed to scientific excellence. Lilly provides a stimulating professional atmosphere with many opportunities for collaborative, multidisciplinary research. The company offers an attractive compensation program. Entry level and salary will be based upon each candidate's experience.

For prompt consideration, please forward your *curriculum vitae* to:

**Robert L. Nist  
Science Recruitment (AT1)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285**



## POSITIONS OPEN

### UNIVERSITY OF FLORIDA FACULTY POSITION CLINICAL PHARMACOLOGIST/INTERNIST

The Department of Pharmacology and Therapeutics of the College of Medicine, in cooperation with the Department of Medicine, invites applications for a full-time tenure-track assistant professor for primary appointment in Pharmacology. Applicants must be Board qualified or eligible in a subspecialty of Internal Medicine and have had formal training in clinical pharmacology. The successful applicant will have leadership skills and be expected to develop an independent research program, coordinate the teachings of therapeutics to upper year medical students and residents, and participate in clinical care. Salary will be commensurate with level of experience and accomplishment. Applicants should send curriculum vitae including bibliography and names of three references to: **Dr. Kathleen Shiverick, Box J-267 JHMHC, Gainesville, FL 32610** before 17 October 1988 with anticipated starting date as early as 1 July 1989. An Equal Opportunity/Affirmative Action Employer.

**FACULTY POSITION IN PLANETARY SCIENCES, UNIVERSITY OF COLORADO-Boulder.** The University of Colorado is expanding and broadening its program of research and teaching in planetary sciences. The Department of Astrophysical, Planetary and Atmospheric Sciences and the Laboratory for Atmospheric and Space Physics (LASP) invite applications for a joint tenure-track faculty position in the field of planetary sciences. We seek an experienced scientist who will pursue independent research in one or more of the following areas: (i) Planetary astronomy (especially space observations, infrared or ultraviolet observations of the planets and their atmospheres); (ii) Planetary evolution (including origin and evolution of the planets and their atmospheres, dynamics of disks and rings, and comets). Applicants should have a strong commitment to research, to working with graduate students, and to teaching at the graduate and undergraduate levels. Preference will be given to candidates at the assistant professor level but candidates at all levels will be considered. To apply, please send curriculum vitae and the names and addresses of three references to: **Dr. Larry W. Esposito, Chairman, Planetary Sciences Search Committee, LASP, Campus Box 392, University of Colorado, Boulder, CO 80309-0392. Telephone: 303-492-7325.** Salary: Commensurate with qualifications. Application deadline: 15 October 1988. The University of Colorado at Boulder has a strong institutional commitment to the principle of diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities, and disabled individuals.

The Department of Biological Sciences of the University of Notre Dame invites applications for two full-time, tenure-track **FACULTY POSITIONS**; one in **CELL BIOLOGY** and one in **MOLECULAR GENETICS**, which complement current faculty interests in cell, molecular and developmental biology. Both appointments will be made at the assistant professor level starting fall semester 1989.

The respective areas of research expertise are open. However applicants should be addressing fundamental problems which utilize modern biochemical/molecular biological techniques using either prokaryotic or eukaryotic plant or animal systems.

We seek outstanding individuals who will initiate and maintain vigorous research programs. Responsibilities include the direction of graduate students and formal teaching at both the undergraduate and graduate levels. The undergraduate offering may be a course in the applicant's area of expertise or may entail participation in an introductory biology sequence.

We offer seed money, modern research space, outstanding animal care facilities, ready access to major equipment such as TEM, SEM, FACS, macromolecular synthesizers and sequencers housed in a staffed Biocore facility, and a competitive salary. Submit curriculum vitae, names of three references and a statement of research and teaching interests by 1 November 1988 to:

**Dr. Morton S. Fuchs**  
Department of Biological Sciences  
University of Notre Dame  
Notre Dame, IN 46556

*Notre Dame is an Affirmative Action/  
Equal Opportunity Employer.*

## POSITIONS OPEN

### FACULTY POSITION IN BIOCHEMISTRY MEDICAL COLLEGE OF OHIO

The Department of Biochemistry, Medical College of Ohio, invites candidates to apply for a tenure-track position at the assistant professor level. The Department is expanding its faculty to include those with research interests that extend its present programs, which include regulation of gene expression, mechanisms of hormone action, protein structure-function relationships, antifolates, protein kinases, posttranslational modification of peptides, peptide hormone analogues, neuroendocrine regulation, membrane receptors, growth factors, and oncogene function. Candidates who employ molecular approaches to their research problems are particularly encouraged to apply. Responsibilities will include establishment of an active research program and participation in the teaching of medical and graduate students. Research facilities within the Department include a core laboratory with state-of-the-art equipment for peptide and oligodeoxynucleotide synthesis, and for protein sequence analysis. Application deadline is 15 October 1988. Send curriculum vitae, brief summary of research goals, and three letters of reference to:

**Dr. Larry Gentry**  
Chairman, Search Committee  
Department of Biochemistry  
Medical College of Ohio  
C.S. 10008  
Toledo, OH 43699  
*An Equal Opportunity Employer.*

The University of Oklahoma. Outstanding candidates are sought for two tenure track **FACULTY POSITIONS**, one at the assistant and one at the assistant/associate level beginning August 1989. Applicants must have a Ph.D. and an excellent research record. The successful candidate must have a strong commitment to contributing actively to the undergraduate and graduate programs in inorganic chemistry. For one position, priority will be given to candidates who will establish a leading research program at the inorganic/biological interface. For the other, preference will be given to those establishing active research programs in energy- or materials-related inorganic chemistry. Send curriculum vitae, three confidential reference letters, and an outline of research plans and teaching interests to: **Chair, Faculty Search Committee, Department of Chemistry, University of Oklahoma, Norman, OK 73019 by 15 October 1988.** The University of Oklahoma is an Affirmative Action/Equal Opportunity, Title IX Employer.

University of Rochester. The Department of Chemistry invites applications for tenure-track **FACULTY POSITIONS** beginning fall 1989 at the level of assistant professor or higher. We seek applicants who will establish an outstanding research program; candidates in organic chemistry and inorganic chemistry including materials and surface science are encouraged. Applicants should submit curriculum vitae (including selected reprints), a statement of research plans and objectives and arrange for three letters of reference to be sent to: **Douglas H. Turner, Chairman, Search Committee, Department of Chemistry, University of Rochester, Rochester, NY 14627.** Deadline for receipt of completed applications is 1 November 1988. The University of Rochester is an Affirmative Action/Equal Opportunity Employer/M/F.

### BIOLOGY DEPARTMENT UNIVERSITY OF SOUTH CAROLINA FACULTY POSITIONS IN PLANT BIOLOGY

Applications are sought for two tenure-track positions available in 1989. We are especially interested in individuals applying molecular and biochemical techniques to questions in plant biology. The specific field of research is open and could include areas from molecular to organismic biology. Applicants must demonstrate a productive, independent research program. Generous start up funds will be provided: academic rank open. Please send curriculum vitae and names of three references by 15 October 1988 to: **Dr. David Lincoln, Plant Biology Search Committee, Department of Biology, University of South Carolina, Columbia, SC 29208.**

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

## POSITIONS OPEN

### FACULTY POSITIONS IN CELL AND MOLECULAR BIOLOGY

Several tenure-track positions are available in the Department of Cell Biology and Anatomy at New York Medical College. Appointments can be at the assistant, associate, or full professor level. Preference will be given to individuals applying cellular, molecular, or biophysical approaches to research projects with high potential for funding. In addition candidates should be willing to participate in quality medical and graduate student teaching programs. Modern laboratory space, equipment, start-up funds and salary support are available in an expanding department within a stimulating environment. New York Medical College is located on an attractive campus in suburban Westchester County within close proximity to the cultural, and educational resources of New York City. Send curriculum vitae and names and addresses of three references to: **Dr. Joseph Etlinger, Professor and Chairman, Department of Cell Biology and Anatomy, New York Medical College, Basic Science Building, Valhalla, NY 10595.** An Equal Opportunity Employer, M/F/V/H.

### NORTH CAROLINA STATE UNIVERSITY FACULTY POSITIONS DEPARTMENT OF BIOCHEMISTRY

Three tenure-track research/teaching faculty positions (assistant and associate professorships) are available with a starting date of 1 July 1989. Expansion of the Department of Biochemistry over the next 5 years is being undertaken to continue developing areas in biotechnology and biophysics as well as to complement existing areas of strength. The Department of Biochemistry is within the College of Agriculture and Life Sciences and represents a joint program with the College of Physical and Mathematical Sciences. Applicants may apply from the many areas of biochemistry, but applicants from the areas of plant molecular biology and biophysics, bioinorganic chemistry, and the structural biology of proteins and membranes are particularly welcome. Attractive salaries commensurate with experience, generous laboratory space, and support for equipment and supplies are available. Biochemistry degrees offered include the B.S., M.S., and Ph.D. North Carolina State University, as one of the Research Triangle Universities, provides a rich environment for collaborative interactions with Duke University and the University of North Carolina at Chapel Hill, as well as institutions in the Research Triangle Park. Send applications, including a detailed curriculum vitae, a brief description of research interests, and names and addresses of three references to: **Dr. Elizabeth C. Theil, Chair, Search Committee, Department of Biochemistry, Box 7622, North Carolina State University, Raleigh, NC 27695-7622.** Applications will be accepted until 15 November 1988. NCSU is an Affirmative Action/Equal Opportunity Employer.

**FINE-SEDIMENT TRANSPORT/REMOTE SENSING.** The U.S. Geological Survey (USGS) is seeking candidates for a **RESEARCH POSITION** on the transport of fine sediments in coastal waters. The successful applicant will be part of the USGS Coastal Geology Program and will work with an interdisciplinary team, composed of investigators from universities, State agencies, and the USGS, whose research is focused on the processes causing coastal erosion and wetland loss. Candidates should have a comprehensive quantitative background in the physics of sediment transport, particularly in regard to fine, cohesive sediments. Background and experience in state-of-the-art remote sensing, and its application to fine sediment transport in wetlands and shallow marine environments, are highly desirable. Requirements are a Ph.D. and proven ability, or clearly demonstrated potential, for creative, independent research and publication of research results in refereed journals. The position will be a 4-year term appointment at the GS-12-GS-14 level (\$33,218 to \$46,679) with the Center for Coastal Geology and Regional Studies, a new USGS research facility on the campus of the University of South Florida in St. Petersburg, Florida. Applicants should submit résumé, brief description of research interests, three letters of recommendation, and SF 171 (Personal Qualifications Statement—available from U.S. Post Offices) to: **Dr. Asbury H. Sallenger, Chairman Search Committee, U.S. Geological Survey, 12201 Sunrise Valley Drive, MS 914, Reston, VA 22092.** The USGS is an Equal Opportunity Employer.

## ROCKEFELLER FOUNDATION BIOTECHNOLOGY CAREER FELLOWSHIPS

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

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

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

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

## 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. *SCIENCE* is mailed on the cover date.

Film (right-reading, emulsion face down) or full camera ready art 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, at a 15% premium. ¼ and ½ page ads only.

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**

## Ph.D. RESEARCH SCIENTIST METABOLIC DISORDERS

Wyeth-Ayerst Research, a subsidiary of Fortune 100 American Home Products Corporation, has an opening for a Ph.D. Scientist in the Experimental Therapeutics Division of our expanding Princeton, NJ research facility.

The Metabolic Disorders section of Wyeth-Ayerst Research is currently expanding its research effort in the atherosclerosis area. An opening is available for a senior scientist with a strong interest in developing a research program on mechanisms involved in lesion formation. The successful candidate will have a Ph.D. and experience relevant to the study of atherosclerosis. Experience with lesion assessment techniques in animal models of atherosclerosis is essential. Skills and experience in cell culture would be an added advantage.

Wyeth-Ayerst offers an excellent salary and benefit package plus career advancement opportunities along with an ultra-modern research facility. Interested candidates should send resume and salary requirements to:

**Personnel Manager, Dept. KS**

**WYETH-AYERST  
RESEARCH**

**CN 8000  
Princeton, NJ 08543-8000**

Equal Opportunity Employer M/F/H/V

## Meet organisations who are seeking scientific staff **Employment Exchange** **at British Laboratory Week** October 13-15, Olympia, London

- Rapid, confidential contact with many leading firms and institutions.
- Positions available for wide variety of scientific and technical specialties.
- Held at British Laboratory Week, Britain's leading interdisciplinary laboratory exhibition.
- Posting of positions available. Interview booths.
- Operated as a service to companies and prospective employees.
- No charge to candidates.

Take advantage of this unique employment opportunity. Plan now to attend British Laboratory Week. For advance, confidential screening and forwarding of your CV, send a copy to:

Edward C. Keller, Recruitment Director  
c/o Scherago Associates, Inc., Science Magazine  
15 Smithay Meadows  
Christow Exeter  
Devon EX6 7LU England



**SCIENCE** The Global Weekly of Research

## POSITIONS OPEN

### FACULTY POSITION IN ORGANIC CHEMISTRY AT IOWA STATE UNIVERSITY

Applications are invited for this position which will become available 1 July 1989. All research areas in organic chemistry will receive consideration. The appointment probably will be at the assistant professor level; however, applications at all levels will be considered. Candidates with outstanding potential and commitment to excellence in both research and teaching are sought to join a faculty with a strong tradition of research in organic chemistry. Applicants should submit curriculum vitae, transcripts, a list of publications and a detailed statement of research plans and teaching objectives to: **Organic Search Committee, c/o Professor D. K. Hoffman, Chemistry Department, Iowa State University, Ames, IA 50011.** Junior applicants also should arrange for at least three letters of recommendation to be sent. Evaluation of applications will begin in October 1988. *Women and minority applicants are encouraged to apply. Iowa State University is an Affirmative Action/Equal Opportunity Employer.*

### IMAGE ANALYSIS SYSTEM RESEARCH ASSOCIATE

The Department of Physiology, Morehouse School of Medicine is seeking a mature individual to manage a multi-user SUN-based Image Analysis facility. Background in cell biology with programming experience in UNIX required; experience in fluorescence microscopy and video technology highly desirable; in computer interfacing and networking desirable. Salary commensurate with qualifications and experience. Position available August, 1988. Qualified applicants should submit curriculum vitae to: **Dr. Catherine Chew, Department of Physiology, Morehouse School of Medicine, 720 Westview Drive, S.W., Atlanta, GA 30310.**

*Morehouse School of Medicine is an Affirmative Action/Equal Opportunity Employer.*

### JUNIOR AND SENIOR FACULTY POSITIONS MOLECULAR BIOLOGY OF THE IMMUNE SYSTEM

The Department of Microbiology and Immunology invites applications for junior and senior level, tenure-track positions focusing on the molecular analysis of significant problems in immunology. Senior candidates should have strong records of research accomplishment with sustained program growth and development. Junior candidates will be expected to develop high quality, independent research programs with long-term growth potential. Teaching responsibilities, which emphasize quality rather than quantity, include medical, dental, and graduate students. A large Center of Excellence grant has resulted in establishment of a Molecular Resource Center within the Department featuring state-of-the-art facilities for: oligonucleotide synthesis, peptide synthesis, hybridoma antibody production, amino acid analysis, protein sequencing, molecular graphics, and flow cytometry. Funds for the initiation of research programs will be available and salaries will be highly competitive. Applications should consist of curriculum vitae, copies of several recent publications, a brief statement of future research goals and three letters of reference to be sent to: **Dr. Terrance G. Cooper, Department of Microbiology and Immunology, University of Tennessee, Memphis, 858 Madison Avenue, Memphis, TN 38163.** Applications will be received until 15 October 1988 or until the positions are filled thereafter. *The University of Tennessee is an Affirmative Action/Equal Opportunity Employer.*

**MARINE LABORATORY DIRECTOR,** Catalina Marine Science Center/University of Southern California through the Hancock Institute for Marine Studies. Staff position with possible research appointment in appropriate academic department. Requirements: Ph.D., in marine sciences; at least 2 years of administrative experience; record of scientific research and teaching. Responsibilities include setting the operating and administrative policy for the Center; program development; promotion of the laboratory's teaching and research programs and facilities; fund raising and grant writing; conducting active research. Please send résumé and names of three references by 14 October 1988, to: **Director, Hancock Institute for Marine Studies, University of Southern California, University Park, Los Angeles, CA 90089-0373.**

## POSITIONS OPEN

**IMMUNOLOGIST:** The Biology Department invites applications for a tenure-track assistant professorship in immunology beginning as early as January 1989, but no later than September 1989. Candidates should have at least 2 years of postdoctoral experience; teaching experience is also desirable. He/she will be expected to establish a vigorous research program (research start-up funds are available), and pursue funding for it. Teaching responsibilities include participation in the biology major's and/or nonmajor's introductory sequences, undergraduate and graduate courses in immunology, and the training of M.S. and Ph.D. students. Applicants should submit: curriculum vitae, list of publications and recent reprints, a statement of current and projected research and teaching interest, and have three letters of recommendation sent to: **Dr. Robert Bast, Biology Department, Cleveland State University, East 24th and Euclid Avenue, Cleveland, OH 44115** by 7 October 1988. *Cleveland State University encourages applications from qualified minority groups and women. Equal Opportunity Employer, M/F/H.*

**LABORATORY DIRECTOR.** To direct the activities of an environmental analytical laboratory which conducts a variety of toxicological and environmental tests for mining, oil and gas, and manufacturing firms. In particular the work involves analysis of EPA priority pollutants, drugs, PCBs, toxic wastes, waste water, hazardous waste, and so forth. The work will involve the following analytical techniques and instruments: GC, GC with purge and trap, HPLC, GC-MS, AA/AE, ICP, Scintillation and other counters for radiological analysis, EMT or RA 1000, TDX 100, Flamephotometers, Spectrophotometers, Ion Chromatography, Cryostat and Microtomes. Must have Ph.D. in biology/zoology; or organic chemistry. Must also have 1 year of experience in toxicology. Forty hours per week, 8:00 a.m. to 5:00 p.m. Annual salary: \$26,000. Qualified applicants send résumé to: **New Mexico Department of Labor, 501 Mountain Road, N.E., Albuquerque, NM 87102.** Job Order No. 178128.

**MOLECULAR BIOLOGIST OR GENETICIST, ASSISTANT PROFESSOR:** We seek a Ph.D. with dissertation and/or postdoctoral experience in any molecular area of biology for a tenure-track faculty position to begin in January or August 1989. The successful candidate will be expected to develop a vigorous research program in any eukaryotic system using modern molecular methods. Teaching duties will include freshman biology and an advanced course in molecular biology. Please send curriculum vitae and a letter describing future teaching and research interests, and arrange to have three letters of reference sent by 15 November 1988 to: **Dr. Bruce McKee, Department of Biology, University of Wisconsin-Eau Claire, Eau Claire, WI 54701.** *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer. Qualified minorities and women are encouraged to apply.*

### MOLECULAR VIROLOGIST PENN STATE

The Veterinary Science Department in the College of Agriculture at The Pennsylvania State University, University Park Campus, is seeking a molecular virologist to fill a tenure-track position (12 months) at the assistant professor level. Applications are invited from interested individuals who possess the Ph.D. degree. A D.V.M. or equivalent degree, and Board certification by the ACVM are desirable. Responsibilities include a major commitment to developing an independent research program in avian influenza; developing and teaching molecular virology at the graduate level, participating in team-taught molecular biology courses, and advising Animal Bioscience undergraduate students. Opportunities exist for cooperative research within the department, college and University. The deadline for nominations and applications is 1 November 1988, or until the position is filled. The starting date is negotiable. Send résumé, the names of three references, and complete transcripts to: **Dr. R. A. Wilson, Chairman of the Search Committee, Department of Veterinary Science, W. L. Henning Building, Box 115A, University Park, PA 16802.**

*An Affirmative Action/Equal Opportunity Employer  
Women and Minorities encouraged to apply*

## POSITIONS OPEN

**MECHANICAL ENGINEER, ZP-830-IV—**The Polymers Division, National Bureau of Standards, Department of Commerce, is seeking a senior mechanical engineer for a 2-year term appointment in the polymer composites field. The position is concerned with characterizing the delamination behavior of polymer composites and relating this behavior through models to properties of the constituents, i.e., the matrix resin and the reinforcing fibers. The duties also include interactions with standards committees to develop the necessary test methods. The applicant will need to have knowledge and experience in (i) fracture mechanics, damage accumulation theories and toughening mechanisms, (ii) experimental characterization of resins, fibers, and composites for delamination and impact failure behavior, (iii) analytical and numerical modeling of failure processes in composites, (iv) the development of fracture mechanics test methods, (v) the use of scanning electron microscopy and other techniques to analyze failure mechanisms, and (vi) the activities of standards committees leading to the development of standard test methods. Applicants must have completed a Ph.D. degree and 1 year of appropriate experience or must have an equivalent combination of education and experience.

The position's starting salary is in the range of \$39,500 to \$50,000 depending on qualifications and experience and has a term of 2 years. Please send Personal Qualifications Statement (SF-171) plus transcripts or OPM 1170/17 to: **Rosemary Hormuth (S) (NBS/DH88-1422/RH), Room A-123, Administration Building, National Bureau of Standards, Gaithersburg, MD 20899.**

*The National Bureau of Standards is an Equal Employment/Affirmative Action Employer located in Gaithersburg, Maryland. U.S. citizenship is required.*

### MICROBIOLOGY/IMMUNOLOGY OR MOLECULAR BIOLOGY

Indiana State University, Department of Life Sciences Center for Medical Technology is accepting applications for a certified **CLINICAL LABORATORY SCIENTIST/MEDICAL TECHNOLOGIST** with a Ph.D. in micro/immuno- or molecular biology. The position is to start spring, 1989 or fall, 1989. The individual will be required to teach a current course in clinical/medical microbiology and an additional course in that area of expertise, establish an externally funded research program and direct graduate students. This is an assistant professor, tenure-track position. Send letter of application, curriculum vitae and names, addresses, and telephone numbers of three references to: **Marcella L. Stevens, Department of Life Sciences, Indiana State University, Terre Haute, IN 47809.** Review of applications will begin 30 October 1988 and continue until the position is filled. *Indiana State University is an Affirmative Action/Equal Opportunity Institution.*

### DEPARTMENT OF MICROBIOLOGY AND PUBLIC HEALTH, AND MSU-DOE PLANT RESEARCH LABORATORY MICHIGAN STATE UNIVERSITY MOLECULAR BIOLOGY OF PLANT-MICROBE INTERACTIONS

The Department of Microbiology and Public Health and the MSU-DOE Plant Research Laboratory have available a joint, tenure-track faculty position at the **ASSISTANT PROFESSOR** level. Applications are being sought from individuals who propose to establish a research program that will use molecular approaches in the investigation of plant-microbe interactions.

The Plant Research Laboratory is operated under a contract from the U.S. Department of Energy and provides a stimulating atmosphere and excellent facilities for research. Generous laboratory space and set-up support will be provided. An ongoing allocation of research funding is associated with the position. Initial participation in teaching will be at the graduate level.

Applicants must have postdoctoral research experience with demonstrated productivity and evidence of potential for independent and innovative research. In order to assure consideration, applications should preferably be received by 1 November 1988. Send curriculum vitae, and a description of research to: **Dr. Jonathan Walton, Chairman, Search Committee, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI 48824.** Telephone: 517-353-4885. *Michigan State University is an Equal Opportunity/Affirmative Action Employer.*



CSIRO  
AUSTRALIA

## PLANT MOLECULAR BIOLOGISTS/ BIOCHEMIST

\$A30,100-\$A43,861

Division of Plant Industry  
Canberra/Sydney  
Australia

The CSIRO Division of Plant Industry conducts research on problems fundamental to plant biology and agricultural production. Prominent among this research are programs concerned with gene transfer and expression, cell culture and cereal biology. The prime objective of this research is to develop the molecular and cellular capacity for genetic manipulation to improve productivity in crop plants. As part of an expansion of this effort applications are invited for research positions in the following areas:

1. The characterisation of transacting factors responsible for the regulation of anaerobically induced genes. Desirable skills include DNA and RNA manipulation, protein purification and antibody experience. Reference Number M8111.

The appointee to this position will be located at Divisional Headquarters in Canberra, ACT.

2. Transformation of maize. Skills include experience in plant transformation and tissue culture. Reference Number M8112.

The appointee will be located in Canberra, ACT.

3. Characterisation of genes controlling dough qualities in flour. This project involves fractionating and characterising the protein components of cereal flour. Genes responsible for dough quality will be cloned and the content of their expression studied. A knowledge of protein biochemistry and familiarity with fractionating flour components would be an advantage. Reference Number D8113.

The appointee will be located at the Division's Wheat Research Unit at North Ryde, Sydney NSW.

Applicants should hold a Ph.D or equivalent qualifications, be well motivated and have experience in molecular biology techniques, preferably in plant molecular biology. In each position the scientist will be working as part of a team and should have appropriate personal qualities.

Tenure for each position is three years with Australian Government superannuation benefits available.

A copy of the job descriptions and the selection criteria can be obtained by telephoning 61 62 46 5206 or by writing to the address given hereunder.

**APPLICATIONS:** Indicating position/s of interest and stating full personal and professional details, names of at least two referees and quoting the relevant reference number/s should be directed to:

**The Chief**  
CSIRO Division of Plant Industry  
GPO Box 1600  
Canberra, ACT 2601 AUSTRALIA

by 26 September 1988.

CSIRO IS AN EQUAL  
OPPORTUNITY EMPLOYER

AB1-PL 88/068



## NATIONAL UNIVERSITY OF SINGAPORE DEPARTMENT OF ORTHOPAEDIC SURGERY

### RESEARCH FELLOW

Applications are invited for appointment as Research Fellow in the **Department of Orthopaedic Surgery**. Candidates should possess a MSc or PhD degree in BioEngineering with background in Electronics and Computer Programming. Research experience in the field of Orthopaedic BioEngineering, Rehabilitation Engineering and other related areas will be an advantage.

The appointment may be for up to three years at a time.

Gross monthly emoluments will range from S\$2979 to S\$4779. (US\$1 = S\$2.04 approx.) The commencing salary is dependent upon the qualifications and experience of the appointee.

Leave and medical benefits will be provided. Depending on the type of contract offered, other benefits may include: provident fund benefits or an end-of-contract gratuity, a settling-in allowance of S\$1,000 to S\$2,000, subsidised housing at nominal rentals ranging from S\$100 to S\$216 p.m., education allowance for up to three children subject to a maximum of S\$10,000 per annum per child, passage assistance and baggage allowance for the transportation of personal effects to Singapore.

Candidates should write to the **Director, Personnel Department, National University of Singapore, 10 Kent Ridge Crescent, Singapore 0511**, giving their curriculum vitae and the names and addresses of three referees who can comment on their research ability and/or professional competence.

## LCW GROUP

Biotechnical Search

At LCW Group, our reputation depends on the success of the biotechnical people we place. That means we carefully screen each candidate for their knowledge, skill and professionalism. And we use the same uncompromising standards in researching prospective clients.

### SCIENTISTS/SR. SCIENTISTS/PROJECT LEADERS

Your work will require a M.S./Ph.D. in Biochemistry, Immunochemistry, Immunology or related science. To meet this challenge you need one or more years' Industrial or Post-Doctoral experience in Assay Development.

### SCIENTISTS/SR. SCIENTISTS/MANAGERS

A Ph.D. in Molecular Biology, Plant Pathology, Biochemistry, Genetics, or related sciences is necessary for these positions. You also need one or more years' Industrial or Post-Doctoral experience in Plant Research, Transformation, and Gene Expression. Experience with monocots a plus.

### MANAGER/DIRECTOR OF RESEARCH AND DEVELOPMENT

To work in this area, you need a Ph.D. in Biochemistry, Immunology, Microbiology, Physiology or related sciences. Five or more years' Industrial experience in Diagnostic Product Development for detection of infectious disease and demonstrated ability to manage a Research Group are also necessary.

Our many successes in matching well qualified people with top companies has established us as an expert placement service in the field. As a biotechnical professional, we can help you find a career that offers the respect, recognition and rewards you deserve. For more information, send your resume in confidence to **J. Carroll, LCW Group, 6750 France Ave. So., Suite 144, Edina, MN 55435-2049**. Equal Opportunity Employer.

## POSITIONS OPEN

**MOLECULAR GENETICIST.** The University of Nevada, invites applications for a 12-month tenure-track appointment in cell and molecular biology at the level of assistant or associate professor. The candidate will be expected to develop an independent research program in molecular genetics. A Ph.D. or M.D. degree and post-doctoral training is mandatory. Applicants should submit their curriculum vitae, a statement of research interests, and three letters of reference to: **Stephen St Jeor, Molecular Genetics Search Committee, Room 208, Howard Research Building, University of Nevada, Reno, NV 89557.** Application deadline is 1 November 1988 or until filled. *Affirmative Action/Equal Opportunity Employer.*

### MOLECULAR GENETICIST

The Department of Life Sciences at Indiana State University seeks applications for a tenure-track position at the assistant professor level. Responsibilities include: develop an externally funded research program, direct graduate students, teach a techniques in molecular genetics course as well as participate in other courses. Candidates with postdoctoral experience and demonstrated research excellence in molecular genetics will be considered. Applicants should send their curriculum vitae, a brief description of current and future research interests, and names, addresses and telephone numbers of three references to: **Dr. William Brett, Chairperson, Department of Life Sciences, Indiana State University, Terre Haute, IN 47809.** Review of applications will begin 2 October 1988 and continue until the position is filled. *Indiana State University is an Affirmative Action/Equal Opportunity Employer.*

### ORTHODONTICS— UNIVERSITY OF WASHINGTON

A full-time, tenure-track position is available at the **ASSOCIATE PROFESSOR OR PROFESSOR** level on 1 January 1989. Responsibilities include conducting research, teaching basic science at the graduate level, and developing research projects with graduate students. Candidates must have received a Ph.D. in a basic science. Relevant areas of study may be craniofacial development, musculoskeletal physiology, mechanisms of tooth and jaw movement, among others. Criteria for selection include proven ability to attract grant funding and a desire to develop clinical relevance from basic science research. Salary is commensurate with rank and qualifications. *The University of Washington is an Equal Opportunity Employer. Females and minorities are encouraged to apply.* Send curriculum vitae and support data to: **Dr. Vincent G. Kokich, Department of Orthodontics, SM-46, School of Dentistry, University of Washington, Seattle, Washington 98195.** Deadline for applications is 1 November 1988.

**PHYSIOLOGIST, ASSISTANT/ASSOCIATE PROFESSOR.** A full-time, tenure-track position is available for a basic scientist with an earned doctorate in physiology to develop and direct a physiology course for freshmen medical students. Development of a research program is expected. One to 2 years of postdoctoral experience is desirable. Applicants should send curriculum vitae and names/addresses/telephone numbers of three references to: **B. H. Ragatz, Ph.D., Chairman, Search Committee, Fort Wayne Center for Medical Education, Indiana University School of Medicine, 2101 Coliseum Boulevard East, Fort Wayne, IN 46805.** *Indiana University is an Equal Opportunity/Affirmative Action Educator, Employer, and Contractor, M/F.*

**POSTDOCTORAL FELLOW.** Postdoctoral fellow to participate in a research program involving the study of fluorescently dyed labeled nucleic acids by fluorescence microscopy. Must be able to conduct experiments of DNA of very large molecular weight in conjunction with electrophoretic mobility studies. Require recent Ph.D. in biophysics or biophysical chemistry with particular specialization in the optical properties of nucleic acids and fluorescence labels for nucleic acids; a student of fluorescence microscopy would be most suited for the research. Requires demonstrated ability to conduct research with a minimum of supervision. Salary range \$2030 to \$2300 per month. Send curriculum vitae and names, addresses and telephone numbers of three references to: **Dr. Marcos Maestre, c/o Ron Lowder A/4842, Lawrence Berkeley Laboratory Employment, 90-1042, 1 Cyclotron Road, Berkeley, CA 94720.** *An Equal Opportunity Employer, M/F/H.*

## POSITIONS OPEN

**POSTDOCTORAL ASSOCIATE IN MOLECULAR CARCINOGENESIS** to conduct research in regulation of oncogene expression during tumorigenesis. Project will investigate cis- and trans-regulatory elements controlling expression of the Ha-ras oncogene during two-stage skin carcinogenesis. Background desired in molecular biology, or recombinant DNA and cloning, or cell culture, or DNA-binding proteins. Send curriculum vitae and names of three references to: **Dr. Jill C. Pelling, Eppley Cancer Institute, University of Nebraska Medical Center, Omaha, NE 68105.** Telephone: 402-559-6304. *Equal Opportunity Employer.*

**POSTDOCTORAL ASSOCIATE.** Ph.D. with a strong background in molecular biology to study the structure and function of a 174 nucleotide prohead RNA essential for phage  $\phi$ 29 DNA packaging. The RNA mediates protein-protein interactions, orients DNA packaging, and functions as a component of the DNA translocating ATPase. Qualifications must include 2 years of research on RNA as well as experience in phage biology, DNA or RNA sequencing, gene cloning, and protein purification. Term of 2 to 3 years, beginning immediately; salary of \$25,000 to \$30,000 based upon qualifications. Send curriculum vitae and references to: **Dwight Anderson, 18-256 Moos Tower, University of Minnesota, Minneapolis, MN 55455.**

**POSTDOCTORAL POSITION** available immediately to study mechanisms of phage  $\phi$ 29 DNA packaging and assembly. An integrated genetic, biochemical and biophysical approach is being used to analyze protein, DNA and RNA interactions that regulate in vitro assembly. Send curriculum vitae and references to: **Dwight Anderson, 18-256 Moos Tower, University of Minnesota, Minneapolis, MN 55455.**

### POSTDOCTORAL FELLOW—BIOLOGY

Molecular biology and biochemical research on root-microbe interactions. Must be competent with equipment (HPLC, Spectrophotometer) and molecular techniques. Send curriculum vitae and names of three references by 15 October 1988 to: **Dr. Anne J. Anderson, Biology, Utah State University, Logan, UT 84322-5305.** *USU is an Affirmative Action/Equal Opportunity and IRCA Employer.*

### POSTDOCTORAL FELLOWSHIP THE JOHNS HOPKINS UNIVERSITY SCHOOL OF HYGIENE AND PUBLIC HEALTH

Postdoctoral position in molecular virology available immediately. Applicants should have experience in molecular biology or virology to participate in research on molecular pathogenesis of human immunodeficiency virus infections. Salary commensurate with NIH positions; excellent benefits. Send curriculum vitae, summary of research experience and names of three references to:

**Dr. B. Frank Polk  
Infectious Disease Program  
Department of Epidemiology  
Johns Hopkins School of Hygiene  
and Public Health  
550 North Broadway, Suite 710  
Baltimore, MD 21205**

**POSTDOCTORAL POSITION (M.D. or Ph.D.)** available with the Department of Neurosurgery at Thomas Jefferson University in experimental and clinical neurophysiology of the spinal cord. The position entails basic spinal cord physiology work involving electrophysiological techniques carried out in the physiology department as well as clinical work with electrodes implanted on the spinal cord in humans. Emphasis is placed on close integration between basic research and clinical neurophysiology. Send curriculum vitae and three reference letters to: **Giancarlo Barolat, M.D., Department of Neurosurgery, Thomas Jefferson University, 1025 Walnut Street, Philadelphia, PA 19107.**

**POSTDOCTORAL POSITION** available immediately in the physiology of water-use efficiency and yield in alfalfa. Help design and perform growth-chamber and field experiments in newly-expanded program. Whole-plant physiologist; experience in gas-exchange measurement and/or micrometeorology desired. Send curriculum vitae and names of three or more references to: **Professor Vincent P. Gutschick, Department of Biology, New Mexico State University, Las Cruces, NM 88003-0001.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately to study cyclic AMP phosphodiesterase and G protein in *Phycomyces blakesleeanus* including their characterization, mode of action and reconstitution in a heterologous system. Experience in a related area of membrane biochemistry is desirable. Send résumé and names of three references to: **Robert J. Cohen, Ph.D., Department of Biochemistry and Molecular Biology, University of Florida, College of Medicine, Gainesville FL 32610.**

### POSTDOCTORAL POSITION JOSLIN DIABETES CENTER HARVARD MEDICAL SCHOOL

Applications are invited from candidates with (projected) Ph.D. or M.D. degree who are interested in studying the Molecular Mechanism of Growth Factor Receptor Signal Transmission [for more details see *Nature* 324, 68-70 (1986); *Science* 236, 197-200 (1987); and *PNAS* 85, 1477-1481 (1988)]. Candidates with expertise in recombinant DNA technology, protein chemistry or cell biology are especially encouraged to apply.

Please send curriculum vitae, including a one to two page summary of your scientific background, reprints, preprints or abstracts (where available), and the names of three references or call: **Dr. Heimo Riedel, Section of Molecular Biology, Joslin Diabetes Center, 1 Joslin Place, Boston, MA 02215.** Telephone: 617-732-2692, -2693.

**POSTDOCTORAL POSITION** available 1 November 1988 to determine the molecular basis for the unique catalytic activity of a mammalian cytochrome P-450 capable of detoxifying certain polychlorinated biphenyls (PCBs). Research will involve recombinant DNA techniques including manipulation of cDNA and genomic libraries, DNA cloning, use of bacterial and yeast expression vectors, and sequence analysis. This is a collaborative project between Dr. James Halpert (pharmacology/toxicology) and Dr. Don P. Bourque (biochemistry), and the appointee will have full access to the facilities and expertise of both departments. Applicants must have strong formal and practical training in molecular biology. Send curriculum vitae, copies of publications, and names of three references 1 October 1988 to: **Dr. James Halpert, Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ 85721.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** for work on molecular biology of hormone receptors. Send résumé, names of three references and description of future plans to: **Dr. Gerald Litwack, Fels Institute for Cancer Research and Molecular Biology, Temple University School of Medicine, 3420 North Broad Street, Philadelphia, PA 19140.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available immediately to study the absorption and metabolism of isotopically labeled forms of vitamin B6 in animals and human subjects. Ph.D. in nutrition, biochemistry or related field required. Experience with HPLC and quantitation of radioisotopes and/or stable isotopes desirable. Salary: \$18,000 per year. Send résumé, transcripts, publications, and three letters of reference to: **Dr. J. F. Gregory, Food Science and Human Nutrition Department, University of Florida, Gainesville, FL 32611-0163.**

**POSTDOCTORAL POSITION** available for a Ph.D. in chemistry or biochemistry to study the electron transfer reactions of cytochrome P-450. A variety of techniques, namely, stopped-flow spectrometry, genetic engineering, NMR, and computer graphics will be employed. Send résumé and three letters of recommendation to: **Dr. L. Waskell, M.D., Ph.D., VA Medical Center, University of California, San Francisco, 4150 Clement Street, San Francisco, CA 94121.**

**POSTDOCTORAL POSITION** available immediately for the isolation, purification, and characterization of the vitamin K-dependent protein(s) in liver mitochondria. Experience in protein purification required. Starting salary: \$22,000. Interested candidates should send curriculum vitae and names of three references to: **Dr. Myrtle Thierry-Palmer, Department of Biochemistry, Morehouse School of Medicine, 720 Westview Drive, SW, Atlanta, GA 30310-1495.**





## ASSOCIATE SCIENTIST

### Cardiovascular Physiology/Toxicology Research



Equal Opportunity Employer

For more than a century, scientists at ELI LILLY AND COMPANY have developed innovative, high quality pharmaceutical products. In 1988, Lilly is investing over \$500 million in research-and-development programs. More than 3,000 scientists at the company's Lilly Research Laboratories and Biochemical Development Divisions are pursuing creative research programs that involve many important health care needs.

To further build its research capabilities, Lilly is seeking a self-motivated, innovative scientist to actively participate in the design, execution, analysis, and reporting of cardiovascular evaluations on novel human and animal health products in various animal species. The ideal candidate will have the following qualifications:

- Master's degree in physiology, biomedical engineering, or a related discipline.
- Strong background in the measurement and analysis of hemodynamic parameters in whole animal preparations utilizing state-of-the-art instrumentation.
- Excellent oral and written communication skills.
- Experience with the programming and use of laboratory computers.

Eli Lilly and Company is committed to scientific excellence. Lilly provides a stimulating professional atmosphere with many opportunities for collaborative, multidisciplinary research. The company offers an attractive compensation program. Entry level and salary will be based upon each candidate's experience.

For prompt consideration, please forward your *curriculum vitae* to:

Robert L. Nist  
Science Recruitment (CV992)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285

## POSTDOCTORAL POSITIONS IN IMMUNOPHARMACOLOGY

**H**offmann-La Roche, a research-intensive pharmaceutical company located in suburban New Jersey, 12 miles from New York City, is seeking three Research Associates (Postdoctoral Fellows) to pursue cytokine-related research in its Immunopharmacology Program.

### RECEPTOR BIOCHEMISTRY

As part of a large multi-disciplinary team utilizing a broad research strategy (from molecular biology to *in vivo* animal studies) to define the role of IL-1 in inflammation and immune functions, you will carry out independent research on the Interleukin-1 receptor and its mechanisms of action. A recent PhD is required; experience in receptor or membrane protein biochemistry including purification and/or signal transduction mechanisms is desired. **Please refer to Position PK on resume.**

### MOLECULAR IMMUNOLOGY

Joining a multi-disciplinary team of Immunologists, Protein Chemists and Molecular Biologists, you will perform research on the identification, characterization and cloning of novel cytokines involved in the regulation of cytolytic lymphocyte responses. A PhD in Immunology or a related discipline, coupled with some experience in molecular biological techniques are required. **Please refer to Position MG on resume.**

### TUMOR IMMUNOLOGY

Working with Immunologists, Protein Chemists and Molecular Biologists, you will isolate and characterize the cell surface molecules involved in the recognition of tumor cells by activated macrophages. This will involve using a series of novel oncogene-transformed macrophage cell lines. A PhD in Immunology or a related discipline, with a strong background in biochemistry or cell/molecular biology are required. **Please refer to Position MB on resume.**

These immediate positions offer the opportunity to conduct basic research while interacting with colleagues skilled in translating the results of research into therapeutic approaches. Publication of results is encouraged.

For immediate consideration, please send your curriculum vitae, the names of three references, and the code for the position you're interested in, to: **Dr. William Benjamin, Director of Immunopharmacology, Roche Research Center, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.** We are an equal opportunity employer.



**Hoffmann-La Roche**

Working Today For A Healthier Tomorrow.

## POSITIONS OPEN

### POSTDOCTORAL POSITION IN MOLECULAR PARASITOLOGY

Investigations of the molecular mechanisms of mammalian cell destruction by *Entamoeba histolytica*. Studies include: identification of target cell ligands that stimulate contact mediated amoeba attack; use of monoclonal antibodies to identify parasite antigens involved in attack; elucidation of the molecular signals initiating attack responses; role of the parasite cytoskeleton in the pathologic mechanisms. Excellent opportunity for a new investigator to develop an independent program of fundamental research on a clinically important, but little studied pathogen.

Send curriculum vitae and references to: **Dr. Gordon B. Bailey**, Department of Biochemistry, Morehouse School of Medicine, Atlanta, GA 30310. *Women and Minorities encouraged to apply.*

### POSTDOCTORAL POSITION MOLECULAR PARASITOLOGY NEW YORK UNIVERSITY MEDICAL SCHOOL

NIH-sponsored position available fall 1988 to study genes encoding surface antigens of malaria parasites. Laboratory investigates the evolution and function of malaria genes and the interaction of malaria antigens with the hosts' immune system. Ph.D. in molecular biology preferred. Please send curriculum vitae, and names and telephone numbers of three references to:

**Dr. Alexandra Levitt**  
Department of Medical and Molecular Parasitology  
New York University Medical Center  
341 East 25th Street  
New York, NY 10010

*New York University Medical Center is an Equal Opportunity Employer.*

### POSTDOCTORAL POSITIONS OPEN

Several funded postdoctoral positions available 1 January 1989 in the **Developmental Biology Center, University of California, Irvine, CA 92717**. Recent Ph.D. required, preferably in cell, molecular or developmental biology, neurobiology, or genetics. Positions are for research with **Dr. Hans Bode** (molecular basis of stem-cell differentiation and patterning in hydra), **Dr. Marianne Bronner-Fraser** (role of extracellular matrix in neural crest migration and neural crest cell lineage), **Dr. Peter Bryant** (molecular genetics of growth control in *Drosophila*), **Dr. Susan Bryant** (molecular and biochemical analysis of growth control in vertebrate limbs), **Dr. Scott Fraser** (videomicroscopic analysis of nerve patterning, analysis of neuronal cell lineages and analysis of gap junctions in tissue patterning), **Dr. Ronald Meyer** (nerve regeneration in adult rodents and fish using in vitro models), **Dr. Ben Murray** (molecular and cellular biology of vertebrate cell-adhesion molecules and their roles in development), **Dr. L. Dennis Smith** (molecular aspects of oogenesis and development), or **Dr. Robert Steele** (developmental genetics of proto-oncogenes). *U.S. citizenship or permanent residency status required.* For more information, contact the individuals above. To apply, submit résumé and description of research interests and experience, and have three letters of recommendation sent to: **The Director, Developmental Biology Center** (address above). Deadline for applications 1 December 1988. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

### POSTDOCTORAL POSITIONS OPEN

The department of clinical immunology and biological therapy has several openings for scientists with Ph.D. and/or M.D. degrees to study cellular and biochemical pharmacology aspects of several novel and clinically useful lymphokines and cytokines. Under investigation will be cellular pharmacology of new interleukins (IL-2, IL-4, IL-6, etc.), TGF's, novel toxin-lymphokine hybrids, interactions between BRM antibody delivery systems, and a variety of other exciting areas.

For further information, please call: **Jordan U. Gutterman, M.D.** at 713-792-2676 or write to the address below:

**The University of Texas Cancer Center**  
Department of Clinical Immunology  
and Biological Therapy  
1515 Holcombe Boulevard-Box 41  
Houston, TX 77030

## POSITIONS OPEN

### POSTDOCTORAL POSITION NEUROBIOLOGY

Opening for Ph.D. or M.D. with experience in membrane biochemistry/cellular neurobiology to participate in studies on the physiological and pharmacological properties of nerve terminals. Position available fall 1988; salary commensurate with experience. Send curriculum vitae, and three letters of recommendation to: **Dr. Mordecai P. Blaustein**, Department of Physiology, University of Maryland School of Medicine, 655 West Baltimore Street, Baltimore, MD 21201. *The University of Maryland is an Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITIONS** beginning June to December 1988 to study the control of gene expression during differentiation and the mechanisms that regulate cell proliferation and differentiation in human epithelial cells and murine mesenchymal stem cells. Experiments will also examine the mechanisms of carcinogenesis and anticarcinogenesis. Individuals with cell and molecular biology experience should apply. Positions offer very competitive salary and fringe benefits. *Applicants must be U.S. citizens or permanent residents of U.S.* Please send curriculum vitae and the names of three references to: **R. E. Scott, M.D., Head, Section of Experimental Pathology, Department of Biochemistry and Molecular Biology, Mayo Foundation, Rochester, MN 55905. *An Equal Opportunity/Affirmative Action Institution.***

Several **POSTDOCTORAL POSITIONS** are available to study promoters and mechanisms of gene expression and signal transduction in *Pseudomonas* in the area of biodegradation of synthetic chemicals and *Pseudomonas* infection in Cystic Fibrosis. Experience in gene cloning, DNA sequencing, hybridization and/or DNA-protein interaction is essential. Please send résumés and other information to: **Dr. A. M. Chakrabarty, University of Illinois at Chicago, Department of Microbiology/Immunology, E-703 MSA, 835 South Wolcott, Chicago, IL 60612. *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.***

**POSTDOCTORAL POSITIONS** to study the molecular mechanisms of RNA editing [see *Cell* 49, 337 (1987); 53, 401 and 413 (1988)] and the molecular basis of antigenic variation in African trypanosomes are currently available. Candidates with interests in RNA processing, control of gene expression or developmental biology are preferred as are those with a conceptual and technical background in molecular biology. Send curriculum vitae, statement of research interests, and three letters of recommendation to: **Dr. Kenneth Stuart, Seattle Biomedical Research Institute, 4 Nickerson Street, Seattle, WA 98109. *Equal Opportunity Employer.***

### POSTDOCTORAL POSITIONS

Two postdoctoral positions are immediately available to study: (i) mechanisms involved in cellular polarization of 8-cell mouse embryos or (ii) regulation of stage-specific expression of alkaline phosphatase in the preimplantation mouse embryo. Experience in embryo handling, immunofluorescence or molecular biology desirable but not required. Send curriculum vitae and the names of three references to: **Dr. Carol Ziomek, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.**

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

**POSTDOCTORAL POSITIONS—CELL SIGNALS.** Three collaborating laboratories have positions for the study of second messenger systems in various cell systems. Stimulus-secretion coupling in chromaffin cells (**E. W. Westhead**); ATP, ADP, AMP and Ado regulation of cAMP and  $Ca^{2+}$  in vascular endothelial and smooth muscle cells (**L. L. Slakey**); and EGF receptor mobility and signalling in human A-431 and fibroblast cells (**D. J. Gross**) are among the systems of interest. Techniques include quantitative optical microscopy (CCD and laser scan focal imaging), novel approaches to signalling kinetics, as well as standard biochemical measurements. Salaries start at \$21,000. Send résumé and names of three references to: **Dr. D. J. Gross, Department of Biochemistry and Program in Molecular and Cellular Biology, University of Massachusetts, Amherst, MA 01003.** Deadline for applications is 1 November 1988 or until suitable candidates have been found. *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### POSTDOCTORAL POSITIONS CELLULAR AND MOLECULAR NEUROSCIENCE

Two postdoctoral research associate positions are available to study the structure and function of amelin [*J. Neurosci.* 7:3907-3914, (1987)] a neuronal spectrin binding protein. Project I includes characterization of the association of amelin with spectrin, its stimulation of the spectrin-actin interaction, and regulation of its functional properties by phosphorylation. Applicants for this position should have a strong background in protein biochemistry. Project II will include the isolation and sequencing of amelin cDNA. Applicants should have a strong background in molecular biology, with prior experience in DNA sequencing technology. Send curriculum vitae and names and addresses of three references to: **Dr. Steven R. Goodman, Chairman, Department of Anatomy and Cell Biology, University of South Alabama, Mobile, AL 36688. *An Equal Opportunity/Affirmative Action Employer.***

**POSTDOCTORAL/RESEARCH ASSOCIATE** position is available immediately for Ph.D. or M.D. to study the thyroid hormone regulation of specific genes during development. Training and/or research background in molecular biology would be useful. Send curriculum vitae and names of three references to: **Dr. Randall C. Jaffe, Department of Physiology and Biophysics, University of Illinois College of Medicine at Chicago, P.O. Box 6998 Chicago, IL 60680. *University of Illinois is an Equal Opportunity/Affirmative Action Employer.***

**POSTDOCTORAL/RESEARCH ASSOCIATE** position available to study RNA Processing in animal cells and viruses. Background either in biochemistry, microbiology or molecular biology needed. Experience in recombinant DNA technology desirable. Salary negotiable. Send résumé with two names for references to: **Dr. Mary Edmonds, Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA 15260. *Equal Opportunity/Affirmative Action Employer.***

**POSTDOCTORAL RESEARCH ASSOCIATE** to study the molecular biology of drug resistance. Project will emphasize determination of basic mechanisms of drug resistance occurring in human tumor cells at both the gene and sub-gene levels. Requires motivated individual with strong interest in clinically relevant basic cancer research. Federal law requires proper documentation of identity and employability at the time of employment. It is requested this documentation be included with your application. Please send curriculum vitae and three letters of recommendation by 31 September 1988, to: **Jonathan Nyce, Ph.D., Department of Pharmacology, East Carolina University, Greenville, NC 27858. *Affirmative Action/Equal Employment Opportunity.***

**POSTDOCTORAL RESEARCHERS.** The Department of Physiology, University of California, Irvine, is developing a postdoctoral candidate pool for possible openings during the 1988 to 1989 fiscal year. Openings may be available in the following research areas: ion channels in lipid bilayers, physical chemistry of membranes, mechanism and regulation of steroid hormone biosynthesis, exercise physiology; in situ electrophoresis of membrane proteins molecular properties of ion channels in excitable cell membranes. Salary is in accordance with current NIH, NSF postdoctoral stipends which are based upon qualifications and years of prior, relevant postdoctoral experience. *Minorities and women are encouraged to apply.* Send curriculum vitae and names of three references to: **Professor Stephen H. White, Chairman, Department of Physiology, University of California, Irvine, CA 92717.**

**RESEARCH ASSISTANT**—State University of New York, Health Science Center is recruiting a postdoctoral research assistant for the division of hematology/oncology. Candidates must have a Ph.D. in the biological sciences. Two to 3 years of experience in molecular biology is preferred. Salary based on qualifications. Forward letters of interest including a complete curriculum vitae to: **Bernard J. Poiesz, M.D., Head, Division of Hematology/Oncology, Department of Medicine, 750 East Adams Street, Syracuse, NY 13210.** Review of applications will begin 15 September 1988 and continue until the position is filled. *An Equal Opportunity Employer.*

**Plan Now  
To Attend!**

# **SECOND ANNUAL NORTH AMERICAN CYSTIC FIBROSIS CONFERENCE**

September 28–October 1, 1988  
Orlando, Florida

A multidisciplinary conference for researchers,  
physicians, and allied health care professionals on the latest  
advances in CF research and care.

Presented by the  
Cystic Fibrosis Foundation

Conference Chairmen:  
Raymond A. Frizzell, Ph.D.  
Beryl J. Rosenstein, M.D.

## **P**LENARY SESSIONS

### **The Search for the Basic Defect**

**Michael Welsh, M.D.**  
University of Iowa

### **Immunological Approaches to Lung Disease**

**Melvin Berger, M.D., Ph.D.**  
Case Western Reserve University

### **Pathophysiology: Bridge from the Lab to the Bedside**

**Thomas Boat, M.D.**  
University of North Carolina at Chapel Hill

## **S**YMPOSIA

### **Cardiopulmonary Management**

**R. Tepper**—Infant Pulmonary Function Testing,  
**J. Michael**—Oxygen Therapy, **G. Larson**—Airway  
Inflammation/Reactivity, **F. Cerny**—Exercise.

### **Psychosocial Issues**

**M. Bluebond-Langner**—Brothers and Sisters, Illness and  
Death, **R. Stern**—Use of Unprescribed Psychoactive Drugs,  
**K. Bartholomew**—Education Interventions.

### **The Search for the Gene**

**F. Collins**—Strategies for Identifying the Gene,  
**R. Williamson**—Chromosome Mediated Gene Transfer,  
**L. Tsui**—Search for the CF Gene.

### **Heart/Lung Transplantation in CF Patients**

Moderator: **L. Taussig**. Panelists—**J. Baldwin**, **J. Cooper**,  
**S. Fiel**, **M. Hodson**, **H. Michalisko**, **B. Reltz**, **D. Schildow**.

### **Clinical Genetics**

**A. Beaudet**—Prenatal Diagnosis, **F. Gilbert**—Carrier  
Testing, **M. Kaback**—Psychosocial Issues.

### **Controversies in CF Care**

**E. Mischler & F. Accurso**—Newborn Screening, **M. Marks**  
& **H. Stutman**—Prophylactic Antibiotics, **A. Coates &**  
**D. Holsclaw**—Postural Drainage and Chest Physical Therapy.

## **Identifying and Characterizing Ion Channels**

**O. Al-Awqati**—The Chloride Channel, **D. Benos**—The  
Sodium Channel, **I. Levitan**—Ion Channel Regulation by  
Phosphorylation.

## **Biology of Pseudomonas and Host Mechanisms**

**C. Cox**—Iron Deposition, **J. Ogle**—Molecular Epidemiology,  
**M. Vasil**—Phospholipase C of Pseudomonas.

## **Nutrition Assessment**

**P. Durie**—Pancreatic Function Testing, **D. Mueller**—Nutrition  
Assessment Techniques, **C. Roy**—Nutrition Intervention.

## **Adult Care**

**S. Fiel**—Manifestations of CF in Adult Patients, **J. Palmer**—  
Reproductive Issues, **G. d'Alonzo**—Advances in the  
Management of Respiratory Failure.

## **Infection in CF**

**L. Bryan**—Antibiotics, **J. McBride**—Management of Viral  
Infections, **J. Sadoff**—Immunoprophylaxis.

## **Regulatory Mechanisms**

**J. Tallman**—Molecular Mechanisms of GABA-Gated Chloride  
Channels, **L. Jones**—Phospholamban and Calcium Transport  
Regulation, **H. de Jonge**—Application of Regulatory Principles.

## **CONTRIBUTED PAPERS AND CONFERENCE PUBLICATION**

More than 175 abstracts will be presented in poster form.  
Proceedings will be published as a supplement to *Pediatric  
Pulmonology*. The conference will also include 23 workshops,  
as well as roundtables in 49 separate subject areas.

**CME credits and CEU's for the conference are pending.**

**REGISTRATION FEE: \$125 (U.S.)**

For more information, contact the

 **Cystic  
Fibrosis  
Foundation**

6931 Arlington Road  
Bethesda, MD 20814  
(301) 951-4422

## POSITIONS OPEN

**QUANTITATIVE ECOLOGIST.** Tenure-track position at the assistant professor rank to begin January 1989. Candidate must have a Ph.D., with postdoctoral research and teaching experience preferred. Teaching duties include biometry, with a specialty area in either population ecology, physiological ecology or multivariate community analyses preferred. Send curriculum vitae, names and addresses of four references, and description of research interest to: **H. G. Marshall, Chairman, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23529.** Review process will begin 1 October 1988, and will remain open until qualified candidate is found. *Old Dominion University is an Affirmative Action, Equal Opportunity Institution and requires compliance with the Immigration Reform and Control Act of 1986.*

### RADIATION BIOLOGIST

Oak Ridge National Laboratory's (ORNL) Biology Division is seeking applicants with a Ph.D. or equivalent in radiation biology with a research emphasis on the mechanisms of induction of cancer. Persons with experience in molecular biology, experimental pathology, or related disciplines are encouraged to respond. The successful applicant will be expected to develop their own research as well as collaborate in ongoing projects of the Radiation Carcinogenesis Program.

ORNL offers an excellent benefits package and a generous relocation program plus a stimulating working environment. Salary commensurate with experience. Qualified applicants should forward résumé, publication list, copies of academic transcripts, and names of three references to: **R. J. Michael Fry (Chairman, Search Committee), Biology Division, P.O. Box 2009, Oak Ridge National Laboratory, Oak Ridge, TN 37831-8077.**

ORNL Operated by Martin Marietta  
for the  
U.S. Department of Energy  
An Equal Opportunity Employer  
U.S. Citizenship/Permanent Resident Required

### REPRODUCTIVE BIOLOGIST/ TOXICOLOGIST

The California Public Health Foundation seeks reproductive biologist/toxicologist to develop risk assessment guidelines for reproductive hazards; assess risks from exposures to specific reproductive toxicants; and administer scientific projects. Applicants must have a Ph.D. and 3 years of postdoctoral experience. Salary ranges are: Reproductive biologist \$4700 to \$5700 per month; reproductive toxicologist: \$3990 to \$4800 per month. Send résumé: **Kim Hooper, Ph.D., Reproductive and Cancer Hazard Assessment Section, CA Department of Health Services, 2151 Berkeley Way, Annex 2, Berkeley, CA 94704.** *Equal Opportunity Employer/Affirmative Action.*

**REPRODUCTIVE PHYSIOLOGIST.** Tenured-track position at the assistant professor rank to begin January 1989. Candidates must have a Ph.D., with postdoctoral research and teaching experience preferred. Successful candidate expected to develop an active research program. Collaborative research possible in reproductive biology and in an in vitro fertilization program. Teaching duties include advanced human physiology and neurophysiology. Send curriculum vitae, names, and addresses of four references and description of research interests to: **H. G. Marshall, Chairman, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23529.** Review process will begin 1 October 1988, and will remain open until qualified candidate is found. *Old Dominion University is an Affirmative Action/Equal Opportunity Institution and requires compliance with the Immigration Reform and Control Act of 1986.*

**RESEARCH ASSOCIATE OF PHARMACOLOGY.** Opportunity exists to work on a project concerned with investigating the mechanisms by which interferon and insulin regulates the transcription of certain genes. In these investigations techniques of molecular biology, recombinant DNA technology and analytical biochemistry will be used. Contact: **Dr. Joseph Larner, Department of Pharmacology, University of Virginia, School of Medicine, Charlottesville, VA 22908.** *An Affirmative Action/Equal Opportunity Employer.*

## The College of Staten Island of the City University of New York

### The Department of Biology

seeks candidates for a full-time tenure track position. Preferred areas of research are microbiology or immunology or biochemistry. Ph.D. and postdoctoral experience required. Teaching experience and grant activity desirable. The Department participates in the CUNY Doctoral program in Biology. Salary and rank commensurate with experience, background and professional qualifications. Send *vitae* and names of 3 references by Nov. 1, 1988 to: **Dr. Richard Resch, Dean of Science and Technology, The College of Staten Island/CUNY, 130 Stuyvesant Pl, Staten Island, NY 10301.**

Equal Opportunity/Affirmative  
Action Employer

## ACQUISITION EDITORS

Academic Press, Inc., an international publisher of scientific and technical books and journals, is seeking experienced applicants for two San Diego-based life science editorial positions with emphasis on biochemistry and molecular biology, cell biology, microbiology, or immunology with a secondary background in ecology, marine biology, or plant science.

The positions offer the opportunity to help shape scholarly publishing for life science textbooks, monographs, references, and scholarly journals. Applicants must have scientific publishing experience or graduate education in biology.

Candidates will offer enthusiasm, creativity, and insight into future trends in research as well as experience in publishing or scientific writing and publishing. Direct interaction with active scientists through extensive travel is required.

The editorial positions offer comprehensive benefits and an excellent starting salary. Letters of application and a resume should be sent to Steven A. Dowling, President, Academic Press, 1250 Sixth Avenue, San Diego, CA 92101.



## SENIOR RESEARCH SCIENTISTS

**BIO-TECHNICAL RESOURCES**, a privately held research and development firm has excellent career opportunities for three Senior Research Scientists. Candidates should have a Ph.D. or equivalent degree.

Candidates should have a strong background in enzymology, microbiology and microbial genetics, and possess a high degree of flexibility, creativity and motivation. Good oral and written communication skills are essential.

Positions are available for research interests in:

- Microbial hydrocarbon conversions
- Biological triple bond formation
- Optimization of microbial product formation by bacteria, yeast and microalgae

Bio-Technical Resources is located 80 miles north of Milwaukee on the shore of Lake Michigan. We offer a challenging work environment, competitive salary and a comprehensive benefit program.

For immediate consideration, send complete resume to Ronald J. Huss, Ph.D., Director of Research, Bio-Technical Resources, 1035 South 7th Street, Manitowoc, WI 54220.

## FACULTY POSITIONS IN MICROBIOLOGY

The Department of Biology at Texas A&M University is augmenting its research effort in Microbiology and invites applications for four tenure-track faculty positions. Candidates should be using bacterial, viral or lower eukaryotic systems to study fundamental biological problems at the genetic, cellular or molecular level. Essential qualifications include a strong record of research accomplishment, the ability to develop a vigorous, independent research program, and a commitment to the training of undergraduate and graduate students. The Department has excellent research facilities and will provide competitive salaries and startup funds. Please send curriculum vitae, a statement of research interests, and the names, addresses and phone numbers of at least three references by October 1, 1988, to:

**Dr. B. G. Foster  
Department of Biology  
Texas A&M University  
College Station, TX 77843**

*Texas A&M University is an Affirmative Action/Equal Opportunity Employer. Minority candidates are especially encouraged to apply.*

**Professor and  
Chairperson  
Department of  
Pharmacology**

**Boston University  
School of Medicine**

The Boston University School of Medicine invites applications for the position of Chair, Department of Pharmacology. The candidate should hold a PhD or MD and have an established and funded record of creative research, a commitment to graduate education and proven leadership and administrative abilities. Consideration will be given to applicants having research interests in any area of pharmacology or closely related disciplines.

**The deadline for receipt of applications is November 1, 1988 with the goal of filling the position no later than July 1, 1989. Send curriculum vitae and list of references to:**  
**Jerome S. Brody, MD, Pharmacology  
Search Committee, Boston University  
School of Medicine, 80 E. Concord  
St., Boston, MA 02118.**

An affirmative action/equal opportunity employer.

**Boston University  
Medical Campus**

**MINERAL AND PROCESS ENGINEERING  
CHIEF OF DIVISION**

CSIRO is seeking an Engineer or Scientist with a commitment to research management, a distinguished record of research achievement, and a sound appreciation of the operation and needs of the Australian minerals industries, to lead and manage our Division of Mineral and Process Engineering.

The Division conducts research in support of the international competitiveness of mineral, energy and metal production industries in Australia. It utilizes its research skills in chemical engineering, mineral processing, and mathematical modelling in close collaboration with industry. Particular emphasis is placed on instrumentation and control; materials handling and mineral beneficiation; and on smelting and ferrous and non-ferrous metal production.

The Division has some 200 staff located in well equipped laboratories at Clayton and Port Melbourne, Victoria and at Lucas Heights and North Ryde (Sydney), New South Wales.

The Chief will provide leadership and scientific direction to the research of the Division, promote its interests to industry, government and the community, and foster collaboration with Australian industry to ensure the application of its research. He or she should have a sound knowledge of the operations and needs of some or all of mineral, base metal and energy industries and of prospective applications of research in these areas.

The position is offered for 5 to 7 years, with appointment on an indefinite basis, including Australian Government Superannuation and subsequent options for a further term or placement in a senior position in the Organisation. The salary will be A\$70,309 (Chief 3) per annum, with an expense of office allowance of A\$2,167 per annum.

Alternatively for an applicant from outside CSIRO a 5 year contract with special remuneration and superannuation package may be negotiated. A renewal option could be included.

**Location:** The appointee will be located at Clayton, Victoria.

The Chairman of the Search Committee Dr A. F. Reid, would be pleased to provide further information or discuss the position with potential applicants. He would also be pleased to receive suggestions for the appointment from people with standing in the field. He may be contacted in Sydney by telephone 61-2-887 8222, telex AA25817 or facsimile 61-2-887 8197.

**Applications:** These will be treated in confidence. Relevant personal particulars, including details of qualifications and experience, and the names of at least three professional referees should be directed to the following address by 30 September, 1988.

Dr A. F. Reid, Director  
Institute of Minerals, Energy and Construction,  
P.O. Box 93, North Ryde, NSW 2113, Australia.



CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER

**MICROPROBE  
CORPORATION**

**DNA PROBE  
TECHNOLOGY  
DIAGNOSTIC &  
THERAPEUTIC  
PRODUCTS**

**MicroProbe**, an innovative, rapidly growing company, applying synthetic oligonucleotide technology to diagnostic and therapeutic products, has immediate openings for Senior Scientists and Research Associates in:

**Molecular Biology:** Non-isotopic DNA probe assay development. Regulation of gene expression at the DNA and RNA level.

**Chemistry:** Synthetic, bio-organic, medicinal, protein and nucleic acid chemistry. Molecular modeling skills are considered desirable.

**Senior Scientists** will have a Ph.D. plus post-doctoral training. Research Associates will have an M.S., or a B.S. with experience.

**MicroProbe** is located in suburban Seattle and offers a stimulating research & development environment, a competitive salary and benefits package, plus an equity position.

Submit resume in confidence to:

**MicroProbe Corporation  
1725 220th Street SE, No. 104  
Bothell, WA 98021**

**MOLECULAR/CELLULAR  
BIOLOGIST**

The Lovelace Inhalation Toxicology Research Institute in Albuquerque, New Mexico seeks a Molecular/Cellular Biologist to join its internationally recognized program concerned with the mechanisms by which airborne toxic materials impact on man and his environment. The Institute approaches its mission with a strong, multidisciplinary team of researchers trained in the biomedical, biophysical and physical sciences. The scope of research includes molecular, genetic, cellular and tissue responses to toxic materials.

The individual we seek will participate in the conduct of research on molecular biology and carcinogenesis, using both *in vitro* and *in vivo* techniques. Doctoral degree in molecular and cellular biology and a strong publication record are necessary, as are good communication skills and a desire to work independently and collaboratively as part of a multidisciplinary team. U.S. citizenship or permanent residency also required. Preference will be given to applicants with 2 or more years of postdoctoral research experience in DNA damage and repair, cell transformation, transcriptional and translational regulation and molecular hybridization techniques.

We offer an outstanding benefit program and a competitive salary. Starting date is negotiable. Qualified applicants are invited to submit a curriculum vitae and summary of research interest to: **Personnel Unit, Lovelace Inhalation Toxicology Research Institute, P.O. Box 5890, Albuquerque, NM 87185. (505) 844-9431.**

We are an Equal Opportunity/Affirmative Action Employer.



## POSITIONS OPEN

### POSITION OPENING RESEARCH ASSOCIATE

The Indiana State Utility Forecasting Group (SUGF) invites applications for a full-time research associate position. This position will involve research in atmospheric emissions control technology, air pollution, chemical and physical aspects of the electric utility industry, and electric utility planning and operation. Familiarity with modeling, systems analysis, and economics is desirable. Preference will be given to applicants having a Ph.D., although ABD candidates or persons having a Master's degree with three to five years of experience will be considered. Advanced degree work should be in environmental science or engineering, mechanical or chemical engineering, or other closely related areas. The position will be based primarily at Indiana University in Bloomington, although some work at Purdue University in West Lafayette will be required. Salary range will be \$21,000 to \$25,000, dependent upon qualifications of applicant chosen.

Interested applicants should submit curriculum vitae and the names of three references by 23 September 1988 to: **Rita Fortner, School of Public and Environmental Affairs, Room 310, Indiana University, Bloomington, IN 47405.**

*An Equal Opportunity/Affirmative Action Educator, Employer, and Contractor, M/F.*

### THE UNIVERSITY OF QUEENSLAND *Equal Opportunity in Employment is University Policy* RESEARCH OFFICER/RESEARCH FELLOW/ SENIOR RESEARCH FELLOW ELECTRON MICROSCOPE CENTRE

Two positions available for independent scientists with experience in applications of electron microscopy to biological, biomedical or physical problems. The Centre is installing a state-of-the-art 400-kV AEM and reorganizing its service and research functions across all applied EM disciplines within the University. The selection of candidates for these positions will strongly influence the research direction and planned expansion of the Centre. Candidates should indicate the subdiscipline within which they would develop their own research program and should also state the earliest date of availability. Applicants are expected to have a Ph.D. in any field of the biological or physical sciences, a good publication record, well-developed communication skills and considerable experience with current electron microscopy techniques. Evidence of fund-raising ability through grants and/or industrial contracts would be an advantage. Instruction of Centre users in sophisticated EM techniques on an informal basis will be required. For further details please contact: **Dr. Ian D. Mackinnon, Director, Electron Microscope Centre, The University of Queensland; telephone: 07-377-4302; facsimile: 07-371-5896.** Salary range \$A24,846 to \$A44,403 per annum for a fixed term of 3 to 5 years with possibility of renewal; level of appointments depends on experience. Successful applicants are eligible to enroll in the University superannuation scheme and to receive limited removal expenses on employment. Closing date: 26 September 1988. Reference No: 35488.

Applications containing names of three referees should be forwarded directly to: **Dr. Mary Barrett, Personnel Services, J. D. Story Building, The University of Queensland, St. Lucia Queensland 4067, Australia.**

### PRINCETON UNIVERSITY CENTER FOR ENERGY AND ENVIRONMENTAL STUDIES

**RESEARCH POSITIONS** available to lead ongoing programs to measure and model energy use and/or indoor air quality in buildings and to develop efficient mitigation techniques. Ph.D. desirable; relevant experience required, although previous area of specialization (chemistry, physics, mechanical engineering ...) is less important than demonstrated keenness and creativity in experimental research and outstanding references. Positions available either as a postdoctoral research associate or at the research staff equivalent of assistant professor. Salary commensurate with experience. *Princeton University is an Equal Opportunity/Affirmative Action Employer.* Apply to: **AMD-88B, Center for Energy and Environmental Studies, H102 Engineering Quad., P.O. Box CN 5263, Princeton University, Princeton, NJ 08544-5263.**

## POSITIONS OPEN

### ASSOCIATE IN RESEARCH DEPARTMENT OF SURGERY

Division of Thoracic Surgery at the Brigham and Women's Hospital has an opening for a research associate to study electrophysiology of gastrointestinal smooth muscle. Applicant should have experience with in-vivo experimentation and chronic animal preparations and basic electrophysiologic techniques. Experience with techniques of blood flow measurement welcome.

Candidates should have a Ph.D. in a related field and capacity for interdisciplinary research and growth. Please send résumé, letter of interest and names of references to: **David J. Sugarbaker, M.D., Chief, Department of Thoracic Surgery, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115.**

**RESEARCH ASSOCIATE IN MEMBRANE PHYSIOLOGY.** Postdoctoral position is available in December to study ion transport and intracellular pH regulation by electrophysiological and optical methods. The laboratory is part of an active group concerned with ionic movements. Interested candidates should send résumé and three letters of recommendation to: **Dr. Albert Roos, Department of Cell Biology and Physiology, Washington University School of Medicine, 660 South Euclid Avenue, St. Louis, MO 63110.** *An Equal Opportunity/Affirmative Action Employer.*

### RESEARCH ASSOCIATE POSTDOCTORAL

Available immediately to study sickle cell membranes by biochemical and biophysical, especially magnetic resonance techniques. Project involves some collaboration with clinicians.

Excellent physical facilities, including EPR, NMR and computer facilities. Experience in red cell and membrane biochemistry preferred. One year of initial appointment, renewal up to 4 years upon mutual agreement. Salary dependent upon qualifications. Send curriculum vitae and three letters of recommendation to:

**Dr. Leslie Wo-Mei Fung  
Department of Chemistry  
Loyola University of Chicago  
6525 North Sheridan Road  
Chicago, IL 60626**

*Equal Opportunity Employer M/F.*

### THE UNIVERSITY OF CALGARY RETINAL NEUROBIOLOGISTS

The University of Calgary Faculty of Medicine has one or more positions available in cellular or molecular biology or biochemistry of the vertebrate retina in the Lions' Sight Centre. Candidate(s) should have a Ph.D. or M.D. with equivalent research training; at least 2 years of postdoctoral experience; and an established record of productive and fundable research in cellular, biochemical or molecular biology of retinal epithelium or neurons. A renewable 5-year Scholar appointment will be available on successful application to the Alberta Heritage Foundation for Medical Research, providing equipment and operating expenses for 2 years and salary for 5 years. Salary and level of appointment will be commensurate with experience.

The successful candidate(s) will hold a faculty appointment in an appropriate department and will be affiliated with the Lions' Sight Centre and a relevant Research Group. Interdisciplinary collaborations will be encouraged, particularly in areas such as retinal development, photoreceptor maintenance and repair, cellular bases of visual processing, and the pathophysiology of diabetic retinopathy. 75% of time will be protected for research.

*In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.* Applications must be received by 1 November 1988. Please send curriculum vitae, summary of research interests, and names of three references to:

**Dr. W. K. Stell  
Director, Lions' Sight Centre  
The University of Calgary  
Faculty of Medicine  
3330 Hospital Drive, N.W.  
Calgary, Alberta T2N 4N1  
Canada**

## POSITIONS OPEN

### UNITED STATES DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE Western Regional Research Center 800 Buchanan Street, Albany, CA 94710

**RESEARCH MICROBIOLOGIST/PLANT PHYSIOLOGIST GS-11-13 (\$27,716-\$39,501).** Lead scientist to oversee a team of postdoctoral research associates in an interdisciplinary research program to biosynthesize natural rubber. Experience in biochemistry, plant physiology, or microbiology required. Ability to lead molecular biology directions essential. Ph.D. desirable. Permanent appointment with excellent benefits. Call: **Dr. Nelson Goodman 415-559-5876** for more technical information. For application and qualification information contact: **Rita Millard, ARS Personnel Division, Beltsville, Maryland at 301-344-3138.**

*An Equal Opportunity Employer.*

**RESEARCH SCIENTISTS.** The Immune Response Corporation (IRC) of San Diego, California, is seeking Ph.D. level scientists to participate in the development of bacterial vaccines and therapeutic products for viral and autoimmune diseases. Currently an opening exists for an individual with experience in microbiology and immunology. Additional positions are available for qualified individuals in virology, molecular biology, cellular immunology, immunochemistry, and protein chemistry. IRC offers excellent salary and benefits, and an opportunity to make a significant contribution in the stimulating environment of a young research-based organization.

Interested candidates should submit their curriculum vitae to:

**Chief Scientific Officer  
The Immune Response Corporation  
6455 Nancy Ridge Drive  
San Diego, CA 92121**

*Equal Opportunity Employer*

### SENIOR FACULTY POSITION IN ALCOHOL AND DRUG ABUSE DEPARTMENT OF MEDICINE UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Invites applications for a senior faculty member to fill an endowed chair in alcoholism and drug abuse. The position will be supported by an endowment of approximately \$1.5 million and will be occupied by a senior clinician/investigator with background experience in this area. The successful candidate will be expected to establish research activities in this field as well as organize a teaching program for students and house officers. A detoxification unit and clinical research facility are available at the affiliated John L. McClellan Veterans Administration Hospital. Additional faculty positions, support for trainees and initial research support will be available. Collaboration with established research programs in several University of Arkansas for Medical Science basic science departments is encouraged. Send applications, curricula vitae, and letters of interest to: **George L. Ackerman, M.D., Professor and Vice-Chairman, Department of Medicine (640), 4301 West Markham Street, Little Rock, AR 72205.**

### SENIOR RESEARCH ASSISTANT MOLECULAR GENETICS THE JACKSON LABORATORY

The Jackson Laboratory, a center for mammalian genetics research located on the coast of Maine, has an immediate opening for a research assistant with a B.S./M.S. and experience in molecular biology. Program includes developing a methodology that would allow analysis of the molecular mechanism of gene conversion of mammalian MHC genes in vivo using mouse H-2K<sup>b</sup> mutants as a model. Excellent opportunity for independent research. Please send curriculum vitae, transcripts, and three letters of reference to:

**Harold R. Wheeler  
Employment Manager  
The Jackson Laboratory  
600 Main Street  
Bar Harbor, ME 04609  
Telephone: 207-288-3371. Extension 1281.**

*An Equal Opportunity/Affirmative Action Employer.*

## Glaxo's Growth Is Your Opportunity

*Glaxo Inc. is not only one of the Top 10 ethical pharmaceutical firms in America, we're also the fastest growing research-oriented company in the country. As such, we can offer exceptional career opportunities, state-of-the-art facilities, and a firm commitment to producing the most effective pharmaceuticals that experience, imagination, and advanced technology can create. Join Glaxo, and apply your knowledge and career ambitions where they'll do you the most good.*

*We currently have the following position available at our Corporate Headquarters located in Research Triangle Park, N.C.*

### RESEARCH GROUP LEADER New Product Development

*Within our Clinical Pharmacokinetics/Bioanalytical Department, this person will be responsible for a methods development group which concentrates on improving and establishing bioanalytical procedures to use on marketed and new chemical entities from Glaxo Research and transferring these new methods to analysts which support the Clinical Development and Research program. While supervising 2-3 research scientists on independent research based or method development projects, this individual will assist in problem-solving chromatographic problems involving method development and study proper analysis projects.*

*Background must include a Ph.D. in Analytical Chemistry or a related area with 3-5 years' experience in the pharmaceutical industry or academia. A strong chromatography background with excellent problem solving skills are required, as well as experience with a variety of chromatography techniques (e.g. EC/LC, HPTLC, GC, GC/MS and RIA). Computer literacy using micro and mainframes and experience using various data acquisition systems (MAXIMA, NELSON, LAS, etc.) and software is required.*

*At Glaxo Inc., growth opportunities and up-to-date facilities are complemented by a location (near Raleigh/Durham) that has excellent resources in close proximity. Prestigious universities, scenic vistas, lively recreational areas, and exciting cultural opportunities are all a part of the daily life of the Glaxo professional. Further, we reward talent and creativity with an excellent salary and benefits package (including a completely equipped, on-site athletic facility). Candidates interested in this position, please send resume, including salary history, to:*

**Human Resources Department  
Job #8620X830**

**Glaxo Inc.**

PO Box 13398  
Research Triangle Park, N.C. 27709  
(No Phone Calls, Please)  
No Private Agency Referrals, Please  
An Equal Opportunity Employer M/F/H/V  
Paving the way to a healthier world.



**BOEHRINGER INGELHEIM PHARMACEUTICALS, INC.**, a major innovator in the research, development, manufacture and marketing of ethical drugs has the following openings in our expanding Toxicology and Safety Assessment Department. These positions are located at our research and development campus located in DANBURY, CT.

### REGULATORY / REVIEWING TOXICOLOGISTS

Responsible for the critical review and evaluation of toxicology and pharmacology studies, analysis and interpretation of data and the integration of reports into scientific documents. Participate in project management teams to maintain effective scheduling and tracking of research projects. The opportunity exists for participation in laboratory activities.

Requirements include a PhD or BS / MS with equivalent experience in Toxicology, Pharmacology or related Life Science with 2 or more years similar experience in industry or government; excellent writing skills, and knowledge of the drug development process.

BOEHRINGER INGELHEIM offers a highly competitive compensation and benefits package, relocation assistance, an excellent work environment and the opportunity to have your contributions recognized. For consideration please forward your resume to: Dept. JC-1S BOEHRINGER INGELHEIM PHARMACEUTICALS, INC., 90 East Ridge, P.O. Box 368, Ridgefield, CT 06877. We are an equal opportunity employer m / f / h / v.



**Boehringer  
Ingelheim**

### MOLECULAR BIOLOGIST/ VIROLOGIST

At Cetus Corporation, we are committed to maintaining our leading role in the research and development of biotechnology-based health care products.

We're currently seeking a Scientist or Research Associate to take part in the development of recombinant herpes viruses for veterinary vaccine uses.

Requirements for this position include experience in molecular biology or virology, and recombinant DNA technology. A background in herpes virus research is desirable. Candidates may have either a PhD or a BA/BS with several years' experience in related areas. For immediate and confidential consideration, please send your resume to:

Cetus Corporation,  
Box JN, 1400 53rd St.,  
Emeryville, CA 94608



We are an Equal Opportunity/Affirmative Action Employer

## POSITIONS OPEN

**SCIENTIST** (Research Assistant Professor equivalent). The focus of the laboratory is the regulation of genes coding for heme oxygenase isozymes. Research areas include cDNA and gene cloning, cDNA expression, transcription regulation during development. Applicants should have expertise in basic molecular biology techniques as applies to eukaryotic cells. Send curriculum vitae and letters of reference to: **Dr. Maines, Department of Biophysics, University of Rochester School of Medicine, Box EHSC, Rochester, NY 14642.** The University of Rochester is an Equal Opportunity/Affirmative Action Employer.

### DEPARTMENT OF SPEECH PATHOLOGY AND AUDIOLOGY THE UNIVERSITY OF ALBERTA

**SPEECH-LANGUAGE PATHOLOGIST:** A tenure-track position is available 1 July 1988 at the rank of assistant professor. The applicant must hold a Ph.D. degree in speech-language pathology or related discipline and specialize in child language disorders. Specific interest in the language disorders of school-aged children is preferable. Proven research and university teaching ability are required and certification by the American Speech-Language-Hearing Association is desirable. Salary will be commensurate with qualifications (annual minimum of \$32,564).

The deadline for receipt of applications is 15 November 1988. The Department of Speech Pathology and Audiology is planning a major expansion in graduate programs, and will have a significant increase in facilities, particularly for teaching and research, upon renovation of recently allocated space. Please apply by sending curriculum vitae, names of three referees and a statement of teaching and research interests to:

**Martha Piper, Ph.D.**  
Dean, Faculty of Rehabilitation Medicine  
316 Corbett Hall  
University of Alberta  
Edmonton, Alberta, Canada T6G 2G4

The University of Alberta is committed to the principle of equity in employment.

**STAFF RESEARCH ASSOCIATE POSITION** open for the studies of transcriptional regulation and function of human theta-1 globin gene [see *Nature* **331**, 94-96 (1988)]. A Ph.D. with research experience in DNA-protein interactions, and polypeptide expression in *E. coli* cells will be an advantage. Send curriculum vitae and references to: **Dr. James Shen, Department of Genetics University of California, Davis, CA 95616.**



### SUPERINTENDENT VIRGINIA TECH'S VIRGINIA SEAFOOD AGRICULTURAL EXPERIMENT STATION HAMPTON, VIRGINIA

Applications are invited for the position of Superintendent of the Seafood Station with concurrent Research Scientist faculty appointment in the Department of Food Science and Technology. Incumbent will be responsible for management of the Virginia Seafood Station and leadership in developing, implementing and monitoring a pre-eminent extension/research program on fish, shellfish and related food products. Ph.D. in food science or related area. Demonstrated extension/research capability, leadership and communication skills. Salary commensurate with qualifications. Applications accepted up to 1 October 1988 or until a suitable candidate is located. Submit résumé, transcripts and three letters of recommendation to:

**Dr. Merle D. Pierson, Head**  
Department of Food Science and Technology  
Virginia Polytechnic Institute and State University  
Blacksburg, VA 24061

VPI&SU is an Equal Opportunity/Affirmative Action Employer

## POSITIONS OPEN

### SYSTEMATIC DIATOMIST

The California Academy of Sciences invites applications for the G. Dallas Hanna Chair of Diatom Studies. This is a career-track position for an Assistant Curator in the Department of Invertebrate Zoology and Geology. The Academy presently holds a collection of 40,000 lots of diatom specimens, principally fossil, most of which are catalogued in a computer data base.

Primary responsibilities of the successful applicant will include: (i) original systematic and evolutionary biological research on diatoms, (ii) curation and expansion of the diatom collection, including securing support for its maintenance, (iii) participation in educational and exhibit activities within the institution.

Requirements: Applicants must have a Ph.D. in a relevant discipline and have demonstrated excellence in diatom systematic research. Preference will be given to applicants with a strong publication record and who have demonstrated an ability to attract grant funds for research and collection support.

To apply: Send curriculum vitae and names and addresses of five references to: **Dr. Daphne G. Fautin, Director of Research, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118.** The closing date for receipt of application materials is 30 September 1988.

*The California Academy of Sciences is an Equal Opportunity Employer.*

The Computation and Neural Systems (CNS) option at the California Institute of Technology is conducting a search for **TENURE-TRACK FACULTY**. CNS is an academic program offering curriculum leading to a Ph.D. degree. It was established in 1986 as an interdisciplinary program primarily between the Biology and Engineering and Applied Science divisions in order to bring together biologists that are investigating how computation is done in the nervous system and engineers and scientists that are applying ideas from neurobiology to the development of new computational devices and algorithms. Appointments can be either in the biology or engineering divisions, or joint, depending on the interests of the successful applicant.

The primary intent of the search is for appointments of either a theorist or an experimentalist at the assistant professor level, however, exceptionally qualified senior candidates may also be considered. The areas for which the search is conducted include: Learning Theory and Algorithms, Biophysics of Computation and Learning, Neural Approaches to Pattern Recognition, Motor Control, Problem Representations and Network Architectures, Small Nervous Systems, Network Dynamics, Speech and Audition. The successful applicant will be expected to develop a strong research activity and to teach courses in his or her specialty.

Applicants should send a résumé, including list of publications, a brief summary of research accomplishments and goals, and names of at least three references to: **Professor D. Psaltis, MS 116-81, Caltech, Pasadena, CA 91125.**

*Caltech is an Equal Opportunity Employer and it specifically encourages minorities and women to apply.*

### DEPARTMENT OF NEUROBIOLOGY, ANATOMY AND CELL SCIENCE UNIVERSITY OF PITTSBURGH, SCHOOL OF MEDICINE

We are seeking to fill **THREE TENURE-TRACK POSITIONS** with individuals having research interests that are compatible with current areas of strength in the department. These include neural development, nerve-muscle interactions, neural transplantation, cortical organization, endocytotic mechanisms and cell/cell interactions. Techniques used include molecular biology, antibody probes and cell biological approaches as well as more traditional neurophysiological and neuroanatomical methods. Candidates must have strong competitive research programs, and be prepared to teach in medical histology/cell biology or gross anatomy courses as well as participate in interdisciplinary graduate programs. Deadline for application is 30 September 1988.

Please send curriculum vitae, a summary of current research and future research plans and the names of three references to: **Raymond D. Lund, Chairman of Search Committee, Department of Neurobiology, Anatomy and Cell Science, University of Pittsburgh, School of Medicine, Pittsburgh, PA 15261.** The University is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**SENSORY NEUROPHYSIOLOGIST:** Tenure-track possibility for position available at assistant professor level. Serious commitment to collaborative work within the Microsurgical Research Center. Expertise required to characterize electrophysiologically the properties of central axons which have regenerated along peripheral nerve implants. Preference given to applicants experienced in spinal cord neurophysiology and tract-tracing and histological techniques. Please send curriculum vitae with three letters of recommendation to: **Dr. Julia K. Terzis, Microsurgical Research Center, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501.**

### UNIVERSITY OF NEW BRUNSWICK

The Biology Department seeks to fill a **TENURE-TRACK POSITION** in environmental biology. Preference will be given to candidates who complement areas of specialization within the Department. These would include, but are not limited to, environmental physiology, phycology, or aquaculture. Applicants must have a Ph.D. and be committed to research and teaching. The successful candidate will be expected to develop a vigorous research program, interacting with existing researchers. In addition they will participate in undergraduate and graduate teaching. Appointment could be at the assistant/associate professor level.

Applicants should submit a letter of application, a statement of their research interests, and curriculum vitae with names of three potential referees to: **Dr. Richard T. Riding, Chairman, Department of Biology, University of New Brunswick, Bag Service No. 45111, Fredericton, N.B. E3B 6E1.** Closing date is 1 November 1988 or as soon as the position has been filled. In accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and permanent residents.

### TENURE-TRACK FACULTY POSITION MOLECULAR BIOLOGY/GENETICS COLLEGE OF MEDICINE THE OHIO STATE UNIVERSITY

Applications are invited for a full-time tenure-track position at the assistant/associate professor level for individuals with an M.D. and/or Ph.D. plus at least 2 years of postdoctoral research experience. Substantial institutional salary support and modern laboratory space commensurate with academic and research record. Individuals who have strong backgrounds in recombinant DNA research relevant to aging and malignancies are particularly encouraged to apply. The position provides excellent opportunities for biomedical research with ongoing programs in immunology, aging, cancer and growth factors. The appointment will be in the appropriate clinical or basic science department with a dual appointment in the Comprehensive Cancer Center. The major responsibility will be to establish a vigorous independent research program with external funding. Please send curriculum vitae, statement of research plans and names of three or more references to:

**Dr. Ronald Whisler**  
Chairman, Search Committee  
The William H. Davis Medical Research Center  
Room S2056  
480 West Ninth Avenue  
Columbus, OH 43210

*The Ohio State University is an Equal Opportunity/Affirmative Action Employer. The institution wishes representation of minority members and women among its faculty and such candidates are particularly encouraged to apply.*

## SYMPOSIUM

### ADVANCES IN CHEMOTHERAPY OF AIDS 23 SEPTEMBER 1988

Symposium on recent advances in basic research on development of novel drugs and pharmacologic approaches against AIDS. Details and application forms from: **Division of Clinical Pharmacology, University of Alabama at Birmingham, Box 600, Birmingham, AL 35294.**

## THE LINK FOUNDATION ENERGY FELLOWSHIP PROGRAM

### Objectives:

To foster energy research: to enhance both the theoretical and practical knowledge and application of energy research; and to disseminate the results of that research through lectures, seminars and publications.

### The Awards:

**Doctoral Student Awards:** On the basis of an application to the foundation in the form of a research proposal, awards will be made to doctoral students in academic institutions. The award will consist of a grant of \$16,000. The student will be awarded \$15,000, of which a maximum of \$12,000 may be used for academic year stipend and summer stipend; \$3,000 is for expenses associated with the research; the remaining \$1,000 is to help defray publication costs of the student research results.

### Basis for Award:

An independent committee will review proposals. Preference will be shown to proposals dealing directly with energy and exploring ideas not yet fully tested, rather than to developed programs already in progress. However, in keeping with the founder's philosophy, ideas that can be implemented in the relatively near term will be given first priority.

### Application Forms and Guidelines:

Please write to:

Link Foundation Fellowship (A-2)

The Office of the Dean

College of Engineering and Applied Science

University of Rochester

Rochester, NY 14627

### Deadline:

Proposals must be submitted on or before December 1, 1988

### Announcement of Awards:

March 17, 1989

*The Link Foundation and the University of Rochester provide equal opportunity regardless of sex, race, handicap, color and national or ethnic origin.*

## RESEARCH SCIENTIST/ MOLECULAR BIOLOGIST

### DIVISION OF COMPARATIVE MEDICINE

Duties include conducting independent research and contributing to collaborative research projects; participating in the teaching and training of post-doctoral associates; providing diagnostic microbiology support for DCM's laboratory animal program.

Qualifications - Ph.D. and post-doctoral research experience in the molecular and genetic aspects of bacterial diseases. Demonstrated ability to obtain extramural funding.

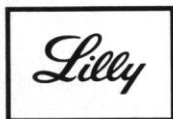
**Applicants should submit curriculum vitae, summary of current research activities, and names of three references to Dr. James G. Fox, MIT Division of Comparative Medicine, 37 Vassar Street, Cambridge, MA 02139.**

MIT is an equal opportunity/affirmative action employer.

A COMMUNITY AT WORK

The MIT logo, featuring the letters "MIT" in a large, bold, serif font, set against a background of a stylized building facade.

## BS/MS SCIENTIST Pharmacology Research



Equal Opportunity Employer

For more than a century, scientists at ELI LILLY AND COMPANY have developed innovative, high quality pharmaceutical products. In 1988, Lilly is investing over \$500 million in research-and-development programs. More than 3,000 scientists at the company's Lilly Research Laboratories and Biochemical Development Divisions are pursuing creative research programs that involve many important health care needs.

To further build its research capabilities, Lilly is seeking a self-motivated, innovative scientist for work in the Immunology, Pulmonary, and Leukotriene Research or the Cardiovascular Pharmacology Divisions. The ideal candidate will have the following qualifications:

- Bachelor's or Master's degree in biology, pharmacology, physiology, or a related discipline.
- Two to five years experience in immunology or pharmacology laboratory.
- Small animal handling and surgery skills desirable.
- Experience with RIA, ELISA, or tissue culture, and experience in enzymology, protein chemistry, or radioligand binding assays also desirable.

Eli Lilly and Company is committed to scientific excellence. Lilly provides a stimulating professional atmosphere with many opportunities for collaborative, multidisciplinary research. The company offers an attractive compensation program. Entry level and salary will be based upon each candidate's experience.

For prompt consideration, please forward your *curriculum vitae* to:

Robert L. Nist  
Science Recruitment (API)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285

## CALL FOR PROPOSALS

### DYSTONIA MEDICAL RESEARCH FOUNDATION Invites Research Grant and Fellowship Applications

Dystonia consists of involuntary, often prolonged muscle spasms resulting in abnormal postures. The diseases include torsion dystonia, spasmodic torticollis, writers' cramp, blepharospasm and orofacial dystonia. Dystonia is thought to be due to basal ganglia dysfunction but pathological findings are few. Present animal models are unsatisfactory.

Proposals on dystonia are solicited, aimed at discovering the cause or improving treatment. Grants are limited to \$25,000 per year, renewable for 1 or 2 years. Applicants are sought for a \$50,000-a-year Fellowship renewable for 3 years to attract gifted investigators to commit time and effort to dystonia. Deadline for review is 15 December 1988. For application forms, write: Dr. Charles Markham, Scientific Director, Dystonia Medical Research Foundation, 8383 Wilshire Boulevard, #800, Beverly Hills, CA 90211.

## COURSE

### TUFTS UNIVERSITY HEALTH SCIENCES CENTER PRESENTS 1988 SYMPOSIUM ON THE CONTROL OF CELL PROLIFERATION AND CANCER: A BALANCED OVERVIEW 13-14 October 1988

Royal Sonesta Hotel, Cambridge, Massachusetts

Supported in part by a grant from the National Institutes of Health.

Program Chairmen: Carlos Sonnenschein, M.D.  
Ana M. Soto, M.D.

Scientific Program: Growth Factors, TGF- $\beta$ , Oncogenes, Cologenes, Tumor Suppressor Genes. Speakers: Aaronson, Bryant, Croce, Duesberg, Folkman, Gatteff, Knudson, Mechler, Moses, Ringertz, Sonnenschein, Soto, Weinberg. For information: Office of Continuing Education, Tufts University School of Medicine, 136 Harrison Avenue, Box 36, Boston, MA 02111. Telephone 617-956-6579.

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIP

NIH Staff Fellow and/or Visiting Fellow/Associate positions are available at the National Institute of Alcohol Abuse and Alcoholism (NIAAA). Studies are on metabolic control, NMR and cloning, expression and characterization of peptide growth factors and their interaction with metabolic processes. Salary range is from \$21,000 to \$32,500 depending upon qualifications. NIAAA is an Equal Opportunity Employer.

Send curriculum vitae and two letters of reference to:

Dr. Richard Veech  
Laboratory of Metabolism and Molecular Biology  
NIAAA  
12501 Washington Avenue  
Rockville, MD 20852  
Telephone: 301-443-3063

### FELLOWSHIPS IN PSYCHIATRIC RESEARCH

Department of Psychiatry, Cornell University Medical College. Research fellowship training in psychiatry for up to 3 years. Opened to individuals completing their PGY-IV year or who are completing a child psychiatry fellowship. Fellows participate in ongoing clinical research projects and learn research design and skills by working closely with research faculty. Among the areas of research are affective disorders, anxiety disorders, child and adolescent psychiatry, AIDS, chronobiology, and geriatric psychiatry.

There are also fellowships available in eating disorders and in psychobiology.

Deadline: 1 November 1988. Contact: Gerald L. Klerman, M.D., Director, Psychiatric Research Fellowship Program, Cornell University Medical College, Payne Whitney Psychiatric Clinic, Box 90, 525 East 68th Street, New York, NY 10021.

## FELLOWSHIPS

ALEXANDER HOLLAENDER DISTINGUISHED POSTDOCTORAL FELLOWSHIP PROGRAM provides research opportunities in the life, biomedical, and environmental sciences. Fellowships are tenable at various U.S. Department of Energy laboratories and university laboratories with programs supportive of the Office of Health and Environmental Research. Stipend is \$35,000. A doctoral degree received after 1 April 1987, is required, as is U.S. citizenship or PRA status. Deadline is 17 January 1989. For application materials contact: Hollaender Postdoctoral Fellowships, University Programs Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117. Telephone: 615-576-3190.

### FELLOWSHIP IN REPRODUCTIVE GENETICS

The Division of Reproductive Genetics, Department of Obstetrics and Gynecology at The University of Tennessee, Memphis, is offering a 2- or 3-year fellowship in reproductive genetics beginning July 1989. The fellowship program is approved by the American Board of Medical Genetics. Applicants must have completed a residency in obstetrics and gynecology, and eligibility for medical licensure in Tennessee is required. The fellowship is designed to provide a comprehensive experience in clinical genetics (counseling, prenatal diagnosis, amniocentesis, chorionic villus sampling, fetal blood sampling, ultrasonography, dysmorphology, teratology, alpha-fetoprotein screening). The program emphasizes laboratory training and research in cytogenetics, DNA analyses, inborn errors of metabolism, immunogenetics and population genetics. Fellows are actively involved in clinical and laboratory research projects. Applicants should send curriculum vitae to: Sherman Elias, M.D., Director, Division of Reproductive Genetics, University of Tennessee, Memphis/University Physicians Foundation, Inc., 853 Jefferson Avenue, Memphis TN 38163. The University of Tennessee, Memphis/University Physicians Foundation, Inc. is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL FELLOWSHIP available immediately for an individual to work on biochemical aspects of T lymphocyte activation. Ongoing projects include studies of myc and fos oncogene expression, transmembrane  $Ca^{2+}$  fluxes, and protein kinase function in T cell subsets of normal and aging mice. Send curriculum vitae, together with names and telephone numbers of three references to: Richard A. Miller, Boston University Medical School, 80 East Concord Street, Boston, MA 02118. Women and members of minority groups are particularly encouraged to apply for this training position.

### CLINICAL PHARMACOLOGY POSTDOCTORAL FELLOWSHIP UNIVERSITY OF COLORADO/DENVER, COLORADO

This NIH-supported fellowship is designed to prepare trainees for careers in academic medicine, the pharmaceutical industry, or government, and includes basic and clinical research training and an active clinical consultation program. Eligibility: The program is open to US citizens or permanent US residents with either an M.D. degree (Board-eligible in primary specialty) or a Ph.D. degree in a biomedical science or related field. Contact: Alan S. Nies, M.D., Head, Clinical Pharmacology, Box C237, 4200 East Ninth Avenue, Denver, CO 80262. Telephone: 303-270-8455. Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL NUTRITION TRAINING at the University of Pennsylvania Medical Center. Six 1-year appointments available 1 July 1989. NIH-sponsored research traineeships in Cancer and Nutrition and Clinical Fellowships in Nutrition/Metabolism (J. Mullen, M.D., Program Director) are awarded on an equal opportunity basis. Research traineeships with core didactic and nutrition research components are available for M.D.'s with 2 years of residency training and for Ph.D.'s. M.D.'s with 3 years of residency training may apply for clinical fellowships with the Hospital of the University of Pennsylvania Nutrition Support Service. Deadline 1 February 1989. Contact: Irene Feurer, M.S.Ed., Department of Surgery, 4 Silverstein, HUP, 3400 Spruce Street, Philadelphia, PA 19104. Telephone: 215-662-6156.

## MARKETPLACE

### FOR SALE

Used Zeiss Ultra-2 Microscope. Complete with Luminar hood, stand, 9 x 12 cm photo head, stage group with substage for transmitted light, illuminator, carbon arc lamp and instrument table. Contact Karen Johnson—Purchasing Department, University of Nebraska Medical Center, 402/559-5497 for a copy of bid S-223 due September 20, 1988 at 2:00 p.m.

### RADIOCARBON DATING & TRITIUM ANALYSIS

These services are available at competitive prices with close lab/client liaison support in earth sciences and archaeological applications. Please write or phone for information required:



Dr. L. D. Arnold  
Alberta Environmental Centre  
Vegreville, Alberta, CANADA  
(403) 632-6761 T0B 4L0

### NEED DNA FAST?

#### Custom DNA in 26 hours\*

Redundancies. Modifications. 5'-Phosphorylation. Low Prices. Purification by HPLC or gel. Linkers, adaptors and standard primers in stock. Call for new low prices.

\*1-800-247-8766

The Midland Certified Reagent Co.  
3112A W. Cuthbert, Midland, TX 79701

Circle No. 50 on Readers' Service Card

### "powerful and easy to use..."

Ask for our free 16 page brochure that includes complete program descriptions and detailed technical application notes.

2034 East Fort Union Blvd  
Salt Lake City, Utah 84121  
telephone: (801) 943-0290

**MicroMath**  
SCIENTIFIC SOFTWARE

Circle No. 45 on Readers' Service Card

### Custom DNA Purified and Delivered in 48 hours.

\$10.00 a base for the first 15 bases, \$7.50 for each additional base. No additional charges.

Research Genetics  
1-800-533-4363

Circle No. 43 on Readers' Service Card

Get the most value  
from your  
research  
dollars

**CUSTOM  
POLYCLONAL  
ANTISERUMS**

Top  
Quality  
Since 1961

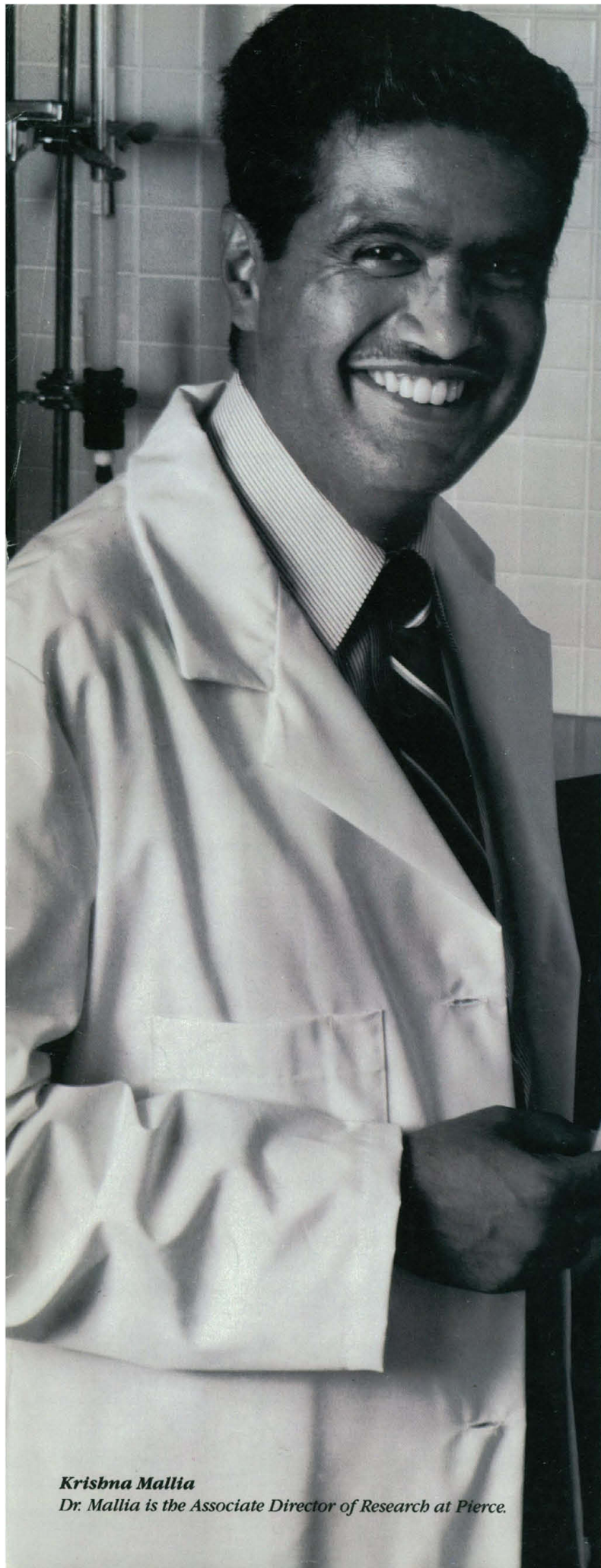
(916) 758-4400 within Calif.

(800) 824-8540 outside Calif.

**AJ Antibodies Incorporated**  
DAVIS, CA 95617-1560

Circle No. 35 on Readers' Service Card





**Krishna Mallia**  
Dr. Mallia is the Associate Director of Research at Pierce.

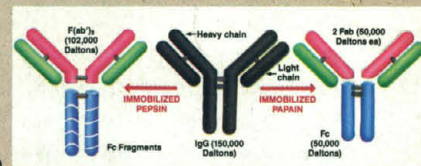
*“A researcher needed better recovery of Fab fragments from her digested IgG.*

*I recommended our ImmunoPure™ Fab Preparation Kit.”*

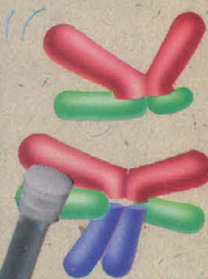
The call came from a researcher trying to digest IgG for the first time. She had a problem recovering Fab fragments from her digested IgG preparation. *The ImmunoPure™ Fab Preparation Kit was the solution.* It's an easy-to-use kit that includes everything needed to recover 80-90% of Fab fragments.

The secret's in the *immobilized* enzyme we include with every ImmunoPure™ Fab

Kit. It eliminates the separation step, saving valuable research time. And better yet, it lets you generate Fab and Fc fragments from IgG—avoiding contamination of final preparations with enzyme.



Whether you're new to research or a seasoned investigator, we think you'll appreciate the special accessory kit that simplifies the manipulation of the immobilized enzyme. And the prepacked columns of immobilized Protein A, along with specially prepared buffers that separate Fab fragments and undigested IgG.



*One convenient kit* combines ease-of-use and high performance.

Call today for information on the complete line of ImmunoPure™ products. Ask about our 97% in-stock policy and guaranteed two-day shipping (at no expense to you—or your institution).



**PIERCE**

**800-8-PIERCE**

(1-800-874-3723)

P.O. Box 117 / Rockford, IL 61105 USA / Telex: 910-631-3419  
Telefax: 815-968-7316 / In Europe call •31-1860-19277

Circle No. 56 on Readers' Service Card



# FROM 1 GOOD IDEA TO 9 MILLION BASE PAIRS

Good ideas have a way of growing.

Today a good new idea—Pulsaphor™ pulsed-field gel (PFG) electrophoresis—has taken root and eliminated the difficulties that separation of large DNA molecules has previously posed. Separation of up to 9 million base pairs, with ultra-high resolution, is now a growing reality.

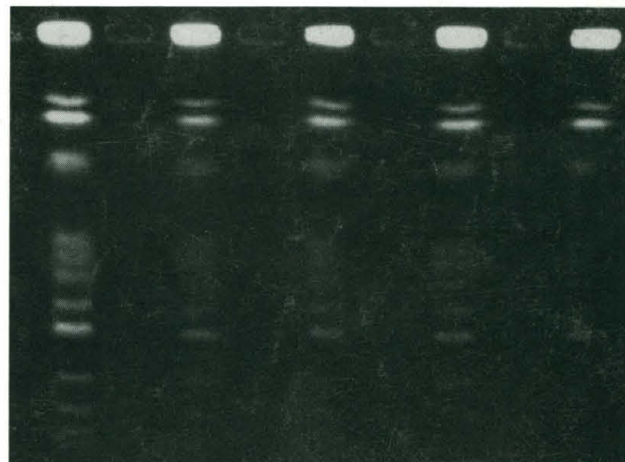
How so? PFG electrophoresis uses two alternating electric fields, applied at different angles for different time periods, to stretch coiled molecules across a horizontal plane. Agarose gel block embedding, using whole cells, protects the vital integrity of the DNA molecules. Novel enzymes and reagents are then employed to digest the chromosomal proteins and other cell components.

Control of the pulse time predetermines the size of molecular separations. Control of the electric field shape increases the resolution by sharpening the separated bands. The result is not only high-resolution separation of large molecules, but also dramatically improved resolution in the separation of smaller DNA fragments.

**NEW!** The new Pulsaphor Plus Control Unit permits programming of the precise pulse and run times that will produce straight lanes for clear, accurate analysis. And up to 9 separate run procedures can be stored in memory for future separations.

**NEW!** Choose between two electrode kits, the conventional point electrodes or the new hexagonal kit, for the flexibility to run present and future variations of the PFG method.

Think about it. Nine million base pairs from one basic idea! Contact your nearest Pharmacia LKB representative today and ask about PFG and Pulsaphor Plus. It's a good idea that you can grow with.



STRAIGHT LANE SEPARATION OF *S. CEREVISIAE* STRAIN CF 22 USING THE NEW HEXAGONAL ELECTRODE KIT.



THE PULSAPHOR SYSTEM INCLUDES AN ELECTROPHORESIS UNIT, POWER SUPPLY AND CONTROL UNIT.



THE NEW HEXAGONAL ELECTRODE ARRAY COMBINES HIGH RESOLUTION PFG AND LARGE SCREENING CAPACITY.



Pharmacia

UNITED IN SEPARATION



Pharmacia LKB Biotechnology Inc. Piscataway, New Jersey 08854, Information: (800) 526-3618, In NJ: (201) 457-8000.

Circle No. 40 on Readers' Service Card