

SN1987A (the magnetic field here was presumably embedded in the surface of the star). Later a longer-lasting pulse of synchrotron radio emission occurs, as has been detected from recent supernovas in nearby galaxies (the magnetic field was more generally distributed).

After a few hundred years the ejecta from the supernova have swept through the circumstellar material and reached interstellar space—but the space is not completely empty: it contains the interstellar medium at densities of order 1 atom per cubic centimeter. Dents appear in the outflow of material as the ejecta encounter the denser clouds in the interstellar medium. The ejecta are moving very supersonically, and shock waves propagating outward and inward heat the ejecta and interstellar material. Thermal x-rays are created by the hot material. The hot material also reveals itself in x-rays and optically by spectral emissions from highly ionized common atoms (9- and 13-times ionized iron, for example). Synchrotron radio waves are the long-lasting result of electrons spiraling in the compressed magnetic field in the shocked interstellar zone. Infrared radiation comes from thermally heated interstellar dust.

The stationary interstellar material is swept up by the ejecta, which thus lose momentum. The ejecta lose their identity as they mix and coast to a halt over 10^5 years. As the explosion slows, the supernova remnants fade from individual discovery. Their general effects remain: cosmic rays, accelerated by the bulk motions of the outflowing clouds; supershells of interstellar material blown up around clusters of stars by energy deposited by successive supernovas; and effects in the evolution of entire galaxies, driven by supernovas.

The papers in this book follow the chronological development of supernova remnants as outlined above. Review papers pace the story, and the contributed papers mostly push it in the same forward direction. Some papers turn the story back with a provocative question or open gateways into fascinating side detours, down which readers can wander as the fancy takes them. Since the Venice symposium five years earlier, new observing equipment (the EXOSAT, IRAS, and IUE satellites, the Very Large Array of radio telescopes) and new theoretical techniques (able to handle lumpy ejecta and a lumpy interstellar medium) have left their mark on the subject. But the five years have been used mostly for thinking. The papers represent a good overview of the supernova story as it is currently understood from, say, $t = 1$ to $t = 10^6$ years.

Looking at the Large Magellanic Cloud supernova, astronomers have already fol-

lowed a nearby supernova event in real time from $t = 0$ to $t = 1$ year. But, even given good health and some luck, few of us will get much past $t = 50$ years. If you can't wait, if you want to plan your observations of SN1987A for the rest of your life, or if you simply want to know its story finishes, read the book.

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Reprints of Books Previously Reviewed

Culture and the Evolutionary Process. Robert Boyd and Peter J. Richerson. University of Chicago Press, Chicago, 1988. Paper, \$14.95. Reviewed **230**, 931 (1985).

Modeling Nature. Episodes in the History of Population Ecology. Sharon E. Kingsland. University of Chicago Press, Chicago, 1988. Paper, \$11.95. Reviewed **230**, 799 (1985).

The New Politics of Science. David Dickson. University of Chicago Press, Chicago, 1988. Paper, \$14.95. Reviewed **225**, 707 (1984).

The Rise of Statistical Thinking, 1820–1900. Theodore M. Porter. Princeton University Press, Princeton, NJ, 1988. Paper, \$12.50. Reviewed **235**, 1262 (1987).

Sexual Selection and Animal Genitalia. William G. Eberhard. Harvard University Press, Cambridge, MA, 1988. Paper, \$14.95. Reviewed **232**, 1029 (1986).

Books Received

Anti-Idiotypes, Receptors, and Molecular Mimicry. D. Scott Linthicum and Nadir R. Farid, Eds. Springer-Verlag, New York, 1988. xii, 322 pp., illus. \$65. From a symposium, Quebec, Canada, June–July 1986.

Apple II in the Laboratory. A. F. Kuckes and B. G. Thompson. Cambridge University Press, New York, 1987. x, 206 pp., illus. \$37.50.

Approaches to Organic Form. Permutations in Science and Culture. Frederick Burwick, Ed. Reidel, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xx, 286 pp. \$64. Boston Studies in the Philosophy of Science, vol. 105.

The Basal Ganglia II. Structure and Function—Current Concepts. Malcolm B. Carpenter and A. Jayaraman, Eds. Plenum, New York, 1987. xii, 548 pp., illus. \$95. Advances in Behavioral Biology, vol. 32. From a symposium, Victoria, B.C., July 1986.

Basic and Clinical Aspects of Nutrition and Brain Development. David K. Rassin, Bernard Haber, and Boris Drujan, Eds. Liss, New York, 1987. x, 370 pp., illus. \$86. Current Topics in Nutrition and Disease, vol. 16. From a symposium, Caracas, Venezuela, Dec. 1985.

Before Freud. Neurasthenia and the American Medical Community, 1870–1910. F. G. Gosling. University of Illinois Press, Urbana, IL, 1988. xviii, 192 pp. + plates. \$22.95.

Biocracy. Public Policy and the Life Sciences. Lynton Keith Caldwell. Westview, Boulder, CO, 1987. xvi, 229 pp. \$33.50.

Comparative Protozoology. Ecology, Physiology, Life History. O. Roger Anderson. Springer-Verlag, New York, 1987. xii, 482 pp., illus. \$65.

Complex Chemical Reaction Systems. Mathematical Modelling and Simulation. J. Warnatz and W. Jäger, Eds. Springer-Verlag, New York, 1987. xiv, 409 pp., illus. \$54.50. Springer Series in Chemical Physics, vol. 47. From a workshop, Heidelberg, F.R.G., Aug. 1986.

Controversial Issues in Social Research Methods. Jerald Greenberg and Robert Folger. Springer-Verlag, New York, 1988. xiv, 237 pp. \$49. Springer Series in Social Psychology.

Dinosaurs in the Attic. An Excursion into the American Museum of Natural History. Douglas J. Preston. Ballantine, New York, 1988. xxii, 308 pp. + plates. Paper, \$4.50. Reprint, 1986 ed.

Distributed Computing. Structure and Complexity. H. L. Bodlaender. Centrum voor Wiskunde en Informatica, Amsterdam, 1987. vi, 294 pp., illus. Paper, Dfl. 45.50. CWI Tract 43.

Dunsink Observatory, 1785–1985. A Bicentennial History. Patrick A. Wayman. Dublin Institute for Advanced Studies and Royal Dublin Society, Dublin, Ireland, 1987. xiv, 353 pp., illus. £1r 25. Historical Studies in Irish Science and Technology, no. 7.

Dynamical Systems and Environmental Models. Hans Gunter Bothe *et al.*, Eds. Akademie-Verlag, Berlin, G.D.R., 1987. 283 pp., illus. DME 38. Mathematical Ecology. From a workshop, Eisenach, G.D.R., March 1986.

Ecological Studies in the Middle Reach of Chesapeake Bay. Calvert Cliffs. Kenneth L. Heck, Jr., Ed. Springer-Verlag, New York, 1987. vi, 287 pp., illus. \$32.70. Lecture Notes on Coastal and Estuarine Studies, vol. 23.

Enhancing Human Performance. Issues, Theories, and Techniques. Daniel Druckman and John A. Swets, Eds. National Academy Press, Washington, DC, 1988. xii, 299 pp. \$39; paper, \$27.

Environmental Science. A Framework for Decision Making. Daniel D. Chiras. 2nd ed. Benjamin/Cummings, Menlo Park, Ca, 1988. xvi, 531 pp., illus. \$37.95. Benjamin/Cummings Series in the Life Sciences.

Karst Hydrology. With Special Reference to the Dinaric Karst. Ognjen Bonacci. Springer-Verlag, New York, 1987. x, 184 pp., illus. \$79.50. Springer Series in Physical Environment, vol. 2.

Laser Processing of Thin Films and Microstructures. Oxidation, Deposition and Etching of Insulators. Ian W. Boyd. Springer-Verlag, New York, 1987. viii, 320 pp., illus. \$59. Springer Series in Materials Science, vol. 3.

Laser Spectroscopy VIII. W. Persson and S. Svanberg, Eds. Springer-Verlag, New York, 1987. xx, 474 pp., illus. \$59.50. Springer Series in Optical Sciences, vol. 55. From a conference, Åre, Sweden, June 1987.

Molecular Crystals. J. D. Wright. Cambridge University Press, New York, 1987. viii, 178 pp., illus. \$54.50.

Neurotransmitters and Epilepsy. Phillip C. Jobe and Hugh E. Laird II, Eds. Humana, Clifton, NJ, 1987. xviii, 376 pp., illus. \$69.50. Contemporary Neuroscience.

Niels Bohr's Philosophy of Physics. Dugald Murdoch. Cambridge University Press, New York, 1987. x, 294 pp. \$59.50.

N.M.R. Techniques and Applications in Geochemistry and Soil Chemistry. Michael A. Wilson. Pergamon, Elmsford, NY, 1987. xii, 353 pp., illus. \$55.

Nostri Plena Laboris. An Author Index to the RDS Scientific Journals, 1800–1985. Charles Mollan *et al.* Royal Dublin Society, Dublin, Ireland, 1987. 120 pp. £1r 25. Historical Studies in Irish Science and Technology, no. 6.

Nuclear Oncogenes. Frederick W. Alt, Edward Harlow, and Edward B. Ziff, Eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1987. x, 226 pp., illus. Paper, \$30. Current Communications in Molecular Biology. Based on a conference, Cold Spring Harbor, March 1987.

Phage Ecology. Sagar M. Goyal, Charles P. Gerba, and Gabriel Bitton, Eds. Wiley-Interscience, New York, 1987. xiv, 321 pp., illus. \$54.95. Wiley Series in Ecological and Applied Microbiology.

Quantum Implications. Essays in Honour of David Bohm. B. J. Hiley and F. David Peat, Eds. Routledge and Kegan Paul (Methuen), New York, 1988. viii, 455 pp., illus. \$49.95.

Recommended Reference Materials for the Realization of Physicochemical Properties. K. N. Marsh, Ed. Blackwell Scientific, Palo Alto, CA, 1987. x, 500 pp., illus. \$76.50. International Union of Pure and Applied Chemistry.

Regionalization. Issues in Intensive Care for High Risk Newborns and Their Families. Claire S. Rudolph and Susan R. Borker. Praeger (Greenwood), Westport, CT, 1987. xvi, 201 pp., illus. \$42.95.

Resource Economics for Foresters. G. Robinson Gregory. Wiley, New York, 1987. xii, 477 pp., illus. \$46.45.

Unconjugated Pterins and Related Biogenic Amines. H.-Ch. Curtius, N. Blau, and R. A. Levine, Eds. De Gruyter, Hawthorne, NY, 1987. xiv, 397 pp., illus. \$117. From a workshop, Flims, Switzerland, Feb.–March 1987.

Products & Materials

Mass Spectra CD-ROM Database

The Registry of Mass Spectral Data, CD-ROM Edition, contains 123,000 mass spectra. All volumes of the book edition fit onto one compact disk (CD). The user can directly access chemical names and synonyms for all compounds, and source data and CAS registry numbers are also available. Search and retrieval software is included on the CD-ROM, as are all the features currently on the mainframe version. To use the registry, the user needs an IBM PC family or completely compatible computer, 640 kilobytes of memory, a Hercules or EGA graphics card, and a CD-ROM player. \$2895. Wiley Electronic Publishing. Circle 530.

SBLC Columns

The MEMSEP 2000 chromatography columns are designed for shallow-bed liquid chromatography (SBLC), a high-performance, low-pressure separation technique. The MEMSEP 2000 columns are filled with a matrix of pure cellulose with low nonspecific binding and high surface area. The cellulose has been modified to permit attachment of ligands. Throughputs of 50 g/hour are possible. Elution volumes of less than 40% of the bed void volume are possible, with HETP values as low as 0.0025 cm. Domnick Hunter Filters (United Kingdom). Circle 531.

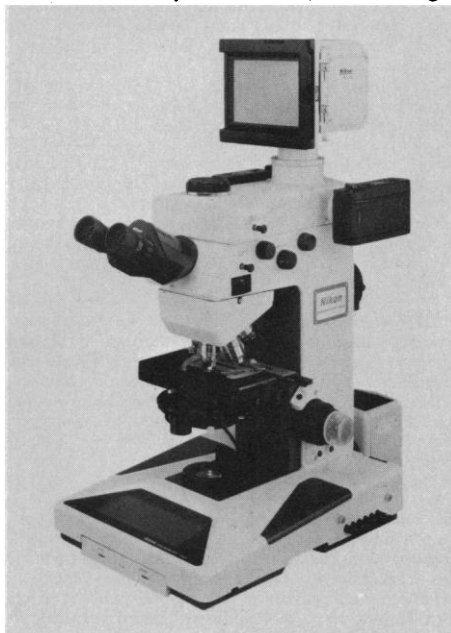
Capillary Columns

The Superbond capillary columns for supercritical fluid chromatography (SFC) have thick tube walls compatible with integral restrictors. These columns have an exterior diameter of 375 μm —double the exterior diameter of standard capillary SFC columns—and an inner diameter of either 50 or 100 μm . Eight stationary phases are available: methyl polysiloxane; 5% phenyl, 95% methyl polysiloxane; 50% *n*-octyl, 50%

methyl polysiloxane; 50% phenyl, 50% methyl polysiloxane; 30% biphenyl, 70% methyl polysiloxane; 25% cyanopropyl, 25% phenyl, 50% methyl polysiloxane; 50% cyanopropyl, 50% methyl polysiloxane; and liquid crystalline polysiloxane. Lee Scientific. Circle 534.

Research Microscope

The Microphot-FXA is a microscope with a built-in microprocessor that automatically controls focus, condenser aperture, objective revolver, camera functions, and data documentation. Software-controlled camera ports accept two DX cameras (cameras that automatically recognize the speed of the film with which they are loaded) and a large-



format camera. The microscope automatically sets the film speed of the DX cameras once they are loaded. Each photograph is automatically labeled with scale value, frame number, file number, and exposure. A keyboard slides out from the front of the camera; the user can select menu choices on the keyboard for the software. The Microphot-FXA has an RS-232C port so that it can send data to a printer or receive data or remote-control instructions from a modem or host computer. Nikon, Instrument Group. Circle 533.

Protein Sequencer

The 8500 ProSequencer is a covalent protein sequencer with a cycle time of less than 30 min. Its chemistry requires only three solvents and three reagents. Menu-driven software accepts as many as 200 predefined or user-defined protocols per

cycle. A resource calculator determines total amount of required reagents. Warnings occur when any function approaches its threshold value; if any limit is exceeded, the sequencer stops either immediately or at the next safe point. A low-volume inert continuous-flow reaction chamber accommodates glass beads or membranes. The temperature-controlled autoconverter is programmable and can heat and cool at rates greater than 10°C per minute. MillGen, Division of Millipore. Circle 540.

Serum-Free Tissue Culture Media

SFM-101 is a chemically defined serum-free media. A protein concentration of 20 $\mu\text{g}/\text{ml}$ enhances collection and purification of monoclonal antibodies and other cell products from culture supernatants. Hypoxanthine-aminopterin-thymidine selection is not needed to prepare new mouse hybridomas. SFM-101 supports the growth of many types of cell lines, including mouse and human, B cell hybridomas, and lymphoid and nonlymphoid cells. Kamiya Biomedical. Circle 532.

Literature

Application #1: Synthetic Oligonucleotide Purification is an application brochure that illustrates the benefits of polymeric reversed-phase high-performance liquid chromatography columns for purification of 5'-dimethyltrityl-protected DNA oligomers. Hamilton. Circle 544.

Precision Optical Components is a 48-page catalog of beam splitters, deep aspheric reflectors, filters, front-surface mirrors, laser beam expanders, laser components, lenses, polarizers, excimer laser optics, prisms, retarders, infrared optics, windows, and solid etalons. Optics for Research. Circle 547.

The *Product Catalog* features nucleic acid analysis services and 200 kinds of reagents, probes, instruments, and accessories for molecular biology. Oncor. Circle 548.

Data Acquisition & Control is a catalog covering instruments, interfaces, and software for data acquisition on many types of computers, as well as signal conditioning, computer vision, and image processing products. MetraByte. Circle 549.

The PC Technical Source-Book is a 76-page booklet of hardware and software facts about the IBM PC family of computers, including information on Edlin commands, DOS commands, hex and decimal equivalents, and error signals. Industrial Computer Source. Circle 552.

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

Electron Microscopist M.S. Cell biology. Experience in protistological and neuroscience applications; recent diagnostic EM experience. All EM process elements, immunocytochemistry, image analysis, autoradiography. U.S. west, sunbelt, or English-speaking laboratory situation worldwide. Box 105, **SCIENCE**.

Immunologist, Ph.D. Principal investigator with 14 years of broad background in inflammatory mediators and platelet and leukocyte function. Some vaccine development. Experience as a coinvestigator in clinical research and development within pharmaceutical industry. Seeking industrial research and development position as group leader or senior scientist. Box 107, **SCIENCE**.

Simultaneous Interpreter and Translator from Japanese publications, patents, and technical reports. P.O.B. 211063, Columbus, OH 43221.

POSITIONS WANTED

Biophysicist. Interested in structural and molecular aspects of protein-protein and protein-DNA interactions. Experience in circular dichroism, laser light scattering, analytical ultracentrifuge, FPLC-HPLC and conventional chromatography (protein chemistry) and plasmid manipulation, with teaching interests in biophysics. Seeking position as an assistant or associate professor. Box 97, **SCIENCE**.

Molecular Biologist, Ph.D./Epidemiologist, M.S. Doctorate and 2 years of postdoctoral experience in molecular retrovirology as well as master's degree and 7 years of experience as a chronic disease epidemiologist. Good publication record in both fields. Seeking challenging work which uses both fields of expertise, in public or private sector. Washington, D.C./Baltimore area. Box 106, **SCIENCE**.

Magnetic Resonance Imaging/Spectroscopist: Ph.D. Seeks position in clinical applications/research and development of NMR imaging and 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 108, **SCIENCE**.

Novel Studies on DNA Superstructure. Recent Ph.D. desires to follow up on results of dissertation research in DNA superstructure. Preliminary evidence suggests that RNA covalently bonded to DNA may be involved in establishing developmentally regulated, independently supercoiled, DNA domain attachment sites. Box 109, **SCIENCE**.

Ph.D. (Physiology) 1988. Seeks immediate postdoctoral position to study carbohydrate metabolism in cultured preadipocyte 3T3 cell lines or hypothalamic-obese animals. Experienced in cell and tissue culture techniques, SDS gel electrophoresis and Western blots. Knowledgeable in PC-based productivity programs. Area of interest flexible. Box 110, **SCIENCE**.

Retrovirologist, Ph.D., 1984. Extensive experience in molecular virology (DNA and RNA tumor viruses), molecular biology, and recombinant DNA technology. Current interest in structure-function studies of retroviral envelope glycoproteins using eukaryotic expression system. Experience in grant management. Good interpersonal and communication skills. Good publication record. Seeking responsible industrial research position in midwest. Box 111, **SCIENCE**.

POSITIONS OPEN

ANATOMY-PHYSIOLOGY-MICROBIOLOGY: TEMPORARY POSITION beginning fall 1988—instructor or assistant professor to teach human anatomy, physiology and microbiology for health professions. Experience in other health sciences and general biology valuable. Ph.D. or experienced M.S. Summer employment may be possible. Send curriculum vitae and three letters of recommendation to: **Dr. Francis M. Thorne, Acting Head, Biology Department, Armstrong State College, 11935 Abercorn, Savannah, GA 31419-1997.** Screening will begin 27 June 1988 and continue until position is filled. *Armstrong State College is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PHYSICIST—Ph.D. in materials science/physics. Two years of postdoctoral experience. Education and training should include undulator error analysis, nuclear resonance scattering and small angle scattering. Will plan and implement innovative experimental research in materials science with emphasis on synchrotron radiation as applied to the study of electronic and structural properties of materials. Publish results in refereed journals and present them at meetings, etc. Assist in design effort of x-ray optics, insertion device source for the 7-GeV Advanced Photon Source. Salary: \$3700 per month; 40 hours per week; 8:30 a.m. to 5:00 p.m. Send résumé to: **Illinois Department of Employment Security, 401 South State Street-3 South, Chicago, IL 60605.** Attention: **Robert S. Felton, Reference #V-IL 7974-F.** *An Employer paid ad.*

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We're looking for an analytical chemist with a strong background in soil and environmental sciences. If we hire you, you'll have experience with gas and liquid chromatography.

You'll also be able to develop analytical methods to support a series of multi-disciplinary programs including: microbiology, plant sciences, aquaculture, air and water quality and nutrition.

Qualifications include a Ph.D. in analytical chemistry or related area with 3 or more years of work experience. Some supervisory/administrative experience and an ability to carry out independent research would be of real value.

You'll be working for Planetary Design Corporation, a technology transfer company developing food and environmental projects around the world, and you'll be living in Tucson one of the nicest places you'd ever want to hang your hat.

If you're interested, please send a résumé and salary requirements to:

Howard Weiss
Vice President
Planetary Design Corporation
2601 East Airport Drive
Tucson, AZ 85706

AQUATIC PATHOLOGY/TOXICOLOGY LABORATORY ASSISTANT (STAFF RESEARCH ASSOCIATE II) \$2025 to \$3041.67 per month. Demonstrated experience (publications or letters of reference) in preparation of embryonic and adult fish tissues for enzyme and immuno-histochemistry; cryopreservation and ultramicrotomy; and computer-assisted morphometric evaluation of tissue lesions in chronic toxicity. Knowledge of topography, gross and microscopic features of liver, kidney, spleen and gill of fishes; experience in care and maintenance of fish for chronic experimentation; experience in proper handling of toxic chemicals and production of publication quality photomicrographs are essential. Knowledge of chemistry, biology, or medical technology is preferred in addition to the above morphologic training. A laboratory skills sheet is required. Apply to: **University of California Davis, Employment Office, TB 122, Davis, CA 95616** for job number 0681 by 15 July 1988. For required application materials call: **916-752-0531.** Monday to Friday, between 10 a.m. and 2 p.m. *Equal Opportunity Employer.*

ASSISTANT/POSTGRADUATE RESEARCH PHYSIOLOGIST. Ph.D. in biochemistry, physiology, or biology required. Experience in phospholipid biochemistry or C-kinase to study their roles in the Cl⁻ secretory process in cultured epithelial cells. Salary set within University of California, San Diego (UCSD) research series salary scale. Apply by 1 August 1988 to: **Dr. Kiertisin Dharmasathaphorn, Department of Medicine, Division of Gastroenterology, H-811-D, UCSD Medical Center, 225 Dickinson Street, San Diego, CA 92103.** *Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR DEPARTMENT OF BIOCHEMISTRY UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE

Candidates for assistant professor (tenure-track) must hold a Ph.D. or equivalent degree, have several years of postdoctoral training, and have demonstrated high quality research and teaching abilities. Preference will be given to individuals using contemporary methods of biochemistry, molecular endocrinology and molecular biology, including techniques utilizing recombinant DNA, site-directed mutagenesis, or monoclonal antibodies. The department has core facilities for nucleic acid and protein sequencing and synthesis. The successful applicant will be expected to develop and maintain an independent, funded research program, and to participate in the training of graduate students, medical students, and dental students. Interested individuals should submit curriculum vitae, a list of at least four professional references, and a brief statement of research interests to: **Search Committee, Department of Biochemistry, University of Louisville School of Medicine, Health Sciences Center, Louisville, KY 40292.** Applications for one or possibly two positions will be accepted up to 1 October 1988 or until a suitable candidate is identified. *The University of Louisville is an Affirmative Action/Equal Opportunity Employer.*

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GIBCO/BRL, a division of Life Technologies, Inc., and leading supplier of research products to the cell and molecular research industry, currently has two positions available in our production department.

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This position will be responsible for production of Nucleic Acid products including DNA's, RNA's and competent cells. Position requires a Ph.D. or M.S. in biochemistry or molecular biology with management experience.

**Group Leader:
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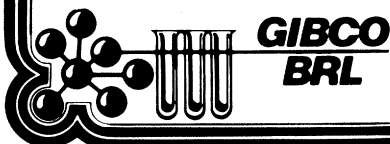
This position will be responsible for the production of modifying and restriction enzymes. Position requires a Ph.D. or M.S. in biochemistry with experience in enzyme purification and some management experience.

We offer a competitive salary with an excellent benefit package.

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Personnel Manager
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Virogenetics Corporation

Albany, NY

The Virogenetics Corporation has been formed as a joint venture between the Institut Merieux and Health Research Incorporated (the non-profit research subsidiary of the NYS Department of Health). Virogenetics is involved in the development of therapeutic and diagnostic products for the human health care and veterinary markets.

Product development is currently under way within the context of strong basic research initiatives in cell biology, virology, immunology, and protein chemistry. Immediate openings are available at the PhD level in all of these disciplines. A major

focus is research and development of human animal vaccines utilizing viral vectors, with an emphasis on genetically engineered pox virus.

Compensation will be commensurate with qualifications. A comprehensive benefit package is included.

Please send a resume and references, along with salary history to:

**Director of Research
Virogenetics Corporation
Room 1683, Corning Tower,
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Research Scientist Neuroanatomist

G.D. Searle, a worldwide leader in pharmaceutical research and development, is seeking a qualified neuroanatomist to join a multi-disciplinary drug discovery team in the Department of Central Nervous System Diseases Research. The current research programs emphasize novel and innovative approaches to drug development for the treatment of nervous system disorders. The responsibilities will include:

- Establishing and supervising a neuroanatomy laboratory for the evaluation of tissues at the light and electron microscopic levels
- Developing, evaluating and utilizing animal models of nerve injury and neurodegenerative diseases
- Collaborating with other investigators and participating as an integral member of project teams in the determination of research direction

The position requires a PhD with 3-5 years' postdoctoral experience in neuroanatomy. The qualified candidate will demonstrate mastery of neuroanatomy, will have experience in neurochemistry, neuropharmacology or neurotoxicology and have utilized state-of-the-art methodologies in receptor autoradiography, neurotransmitter pathway tracing or morphometry. Candidates must have record of publication demonstrating ability to undertake independent and creative research.

This position represents an opportunity to join during the growth phase of a dynamic company. The successful candidate will be offered an excellent salary and benefits package. The position is available at the St. Louis site of G.D. Searle R&D and is housed in a newly built, modern Life Sciences facility. The location offers access to a variety of cultural and recreational facilities, three major universities and a leading neuroscience community. To apply in strict confidence, please forward your resume to: **Joan Lineberry-UW109Z, G.D. SEARLE & CO. R&D, c/o Monsanto, 700 Chesterfield Village Parkway, St. Louis, Missouri, 63198.** An Equal Opportunity Employer.

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POSITIONS OPEN

DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS ANNOUNCEMENT OF OPEN POSITION

The Department of Physiology and Biophysics at the University of Oklahoma Health Sciences Center at Oklahoma City invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. Applicants should have training in neurochemistry or neuropharmacology with experience using molecular biology techniques. The successful candidate will establish an independent research program, assist in the teaching programs of the department, participate in departmental and college governance, and must have a Ph.D. or M.D. degree and at least 2 years of postdoctoral training. The salary is competitive, and the tentative starting date is 1 January 1989. Applicants should send curriculum vitae, including a brief description of current research efforts, and a list of three references no later than 1 September 1988, to: **Robert W. Blair, Ph.D., Chairman, Search Committee, Department of Physiology and Biophysics, University of Oklahoma Health Sciences Center, Oklahoma City, OK 73190.** *The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR NEUROPHARMACOLOGY: Faculty position available to teach autonomic and CNS pharmacology, biostatistics, research design, and advanced undergraduate courses. Opportunities to participate in ongoing neuropharmacology research available. One-year appointment, commencing 16 August 1988. M.A., M.S., or Ph.D. in pharmacology or related field, and demonstrated ability to teach at the undergraduate level required.

Complete job description is available at: **The Department of Pharmacology and Toxicology, 5064 Malott, Lawrence, KS 66045.**

Salary: \$20,000 to \$30,000 commensurate with qualifications. Submit letter of application, curriculum vitae, and three letters of recommendation to: **Dr. Elias K. Michaelis, Chairman, Pharmacology and Toxicology, The University of Kansas, Lawrence, KS 66045.** Applications must be postmarked by 15 July 1988.

Equal Employment Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

ASSISTANT PROFESSORSHIP TENURE-TRACK UNIVERSITY OF COLORADO, BOULDER MOLECULAR, CELLULAR, AND DEVELOPMENTAL BIOLOGY

We seek candidates with research interests in analysis of biological information at the molecular or cellular level, and with experience in computer applications. The successful candidate will be expected to maintain a superior research program and to teach effectively, as well as to oversee and promote continued development of the departmental computing facility and to instruct others in its use. Selection criteria will include promise of proposed research, interaction with colleagues, and teaching ability. Preference will be given to candidates at the assistant professor level but candidates at all levels will be considered. Applications must be received by 31 August 1988. Candidates should submit résumé, copies of publications, an outline of proposed research, and the names of three references to: **W. B. Wood, Search Committee, Department of MCD Biology, Campus Box 347, University of Colorado, Boulder, CO 80309.**

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.

ASSISTANT STAFF INVESTIGATOR

Blood Coagulation Research. We seek someone with 2 to 7 years of postdoctoral experience in protein chemistry or physical biochemistry to direct studies of interacting proteins in coagulation and fibrinolysis. Methods involve fluorescence spectroscopy and rapid reaction kinetics as well as general physical biochemistry. The salary is commensurate with experience, and the position can lead to a permanent staff appointment. Please send curriculum vitae and names of three references to: **Dr. Joseph D. Shore, Division of Biochemical Research, Henry Ford Hospital, 2799 West Grand Boulevard, Detroit, MI 48202.** *Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

The Department of Chemistry, Concordia University, invites applications for a full-time, tenure-track appointment at the rank of **ASSISTANT PROFESSOR IN BIOCHEMISTRY** to begin in January 1989. The department is involved in research in enzyme kinetics (especially metalloenzymes), microbiological biochemistry, plant biochemistry and ecotoxicology. The successful candidate will show promise as an independent researcher, and have the ability to teach effectively at the undergraduate and graduate levels. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.* The current salary floor for assistant professors is \$32,003 per year. Applicants should supply curriculum vitae with an outline of proposed research areas, and should arrange for three letters of reference to be sent to: **Dr. P. H. Bird, Department of Chemistry, Concordia University, 1455 de Maisonneuve Boulevard West, Montreal, Quebec, H3G 1M8.**

ASSISTANT/ASSOCIATE PROFESSOR, ANATOMY/HISTOLOGY: A tenure-track position will be available in the Department of Biomedical Sciences, Washington University School of Dental Medicine, 1 January 1989. Preference will be given to individuals whose research interests are in the neurosciences, musculoskeletal development, and/or molecular approaches to understanding cell-matrix interactions. The selected candidate will be expected to develop a strong research program and participate in the teaching of either gross anatomy or histology. A Ph.D. and postdoctoral experience is required. Interested individuals should submit curriculum vitae, names and addresses of three references and a brief outline of research plans by 1 September 1988 to: **Dr. Philip Osdoby, Washington University School of Dental Medicine, 4559 Scott Avenue, St. Louis, MO 63110.**

ASSISTANT/ASSOCIATE PROFESSOR CLINICAL PATHOLOGY

The Department of Pathology of the University of Michigan Medical School invites applications from physicians who are certified by The American Board of Pathology in Clinical Pathology. Candidates should have a strong commitment to clinical and laboratory aspects of Cytogenetics and/or HLA Typing. The position requires current medical licensure and the attainment of a Michigan State Medical license. This appointment will be in the tenure-track at the level of instructor or assistant/associate professor. The candidate will share in teaching, research and administrative responsibilities for the HLA and/or Cytogenetics laboratories. Candidates must have a demonstrated record of effective professional interactions with clinical colleagues and a record of scholarly productivity as demonstrated by scientific publications. Applicants should send their curriculum vitae and names of references to: **Kenneth D. McClatchey, M.D., D.D.S., Associate Professor and Associate Chairman, Department of Pathology, 2G332/0054, University Hospitals, 1500 East Medical Center Drive, Ann Arbor, MI 48109-0054.** *The University of Michigan is an Equal Opportunity Employer and specifically encourages applications from women and members of minority groups.*

ASSISTANT/ASSOCIATE PROFESSOR LABORATORY ANIMAL MEDICINE

The Department of Laboratory Animal Medicine (DLAM) at the University of Cincinnati seeks a laboratory animal medicine veterinarian with primary service responsibilities at the College of Medicine. Candidate must have a D.V.M./V.M.D. degree, be ACLAM board certified or have completed a residency program in laboratory animal medicine and have advanced training in pathology. In addition to clinical care responsibilities and interactions with investigators in the College of Medicine, position includes participation in all aspects of the DLAM program. This can be a tenure-track position at the assistant/associate professor level and active collaborative or independent research activity is encouraged. Salary and appointment will depend upon qualifications and experience. Résumés accepted until position is filled. For further information, call: **Dr. Steele Mattingly at 513-558-5171.** Apply by letter and submit curriculum vitae with names of three references to: **Dr. Steele Mattingly, Director and Professor, University of Cincinnati, Department of Laboratory Animal Medicine, 231 Bethesda, Cincinnati, OH 45267-0571.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR OF MICROBIOLOGY AND IMMUNOLOGY

The Department of Microbiology and Immunology at The Pennsylvania State University College of Medicine, Hershey, Pennsylvania, is expanding its number of faculty and invites applications for a tenure-track position at the assistant/associate professor level. Candidates for this position should have training and research interest in the biological and/or molecular aspects of microbiology. Special consideration will be given to individuals with expertise in RNA viruses, retroviruses, or microbial pathogenesis. The individual is expected to participate in teaching medical and graduate students. Please send curriculum vitae, bibliography, a description of research plans, and the names and addresses of three references by 15 September 1988 to: **Dr. Fred Rapp, Department of Microbiology and Immunology, The Pennsylvania State University College of Medicine, P.O. Box 850, Department 22, Hershey, PA 17033.** *The Pennsylvania State University is an Equal Opportunity/Affirmative Action Employer.*

McGill University, Department of Mathematics and Statistics. The Department of Mathematics and Statistics at McGill University is seeking to fill a tenure-track **ASSISTANT OR ASSOCIATE PROFESSORSHIP IN MATHEMATICAL STATISTICS** in September 1989.

The applications should be sent to: **Professor K. P. Russell, Chairman, Department of Mathematics and Statistics, McGill University, 805 Sherbrooke Street West, Montreal, Quebec, Canada, H3A 2K6.**

Please include a statement of research accomplishments and plans along with your letter of application, and arrange for three letters of recommendation to be forwarded. *McGill University is an Equal Opportunity Employer, but in accordance with the Canadian Immigration requirements priority will be given to Canadian citizens and permanent residents.* The deadline for the receipt of completed applications is 28 October 1988.

ASSOCIATE SCIENTIST: A high-energy physics research establishment seeks candidates for the position of associate scientist to design, develop, build, install, and operate sophisticated electronic equipment for high-energy physics experiments. Subsequently to analyze data obtained from such experiments, to interpret information gained and publish results. The position is normally 40 hours per week (Monday to Friday, 8:30 a.m. to 5:00 p.m.) and carries a salary of \$33,000 per annum. As a minimum, applicants should hold a Ph.D. in high-energy physics and possess 2 years of postdoctoral experience as a research physicist in high-energy physics experimentation. Please direct résumés to: **Illinois Department of Employment Security, 401 South State Street, 3 South, Chicago, IL 60605. Attention: Robert S. Felton, Ref: V-IL-8364-F.** An employer paid ad.

ASSOCIATE SCIENTIST IMMUNOVASCULAR CELL BIOLOGY

Cetus Corporation seeks an associate scientist to participate in a multidisciplinary project aimed at the study of tumor cell biology, leukocyte inflammatory processes and vascular disease. Responsibilities will include in vitro cell culture, ex vivo and in vitro biological assay development, blood separation and isolation, monoclonal antibody development and in vitro immunoassay development. We require a Ph.D. degree in immunology, cell biology, or biochemistry, and a minimum of 3 to 4 years of directly relevant postdoctoral experience. Additional requirements include a background in tumor immunology, cytokine and antibody immunotherapy with an excellent record of research in cellular immunology plus familiarity with the biotechnology industry. Excellent communication skills, demonstrated leadership skills, and the ability to work as an independent investigator are also essential. The salary range for this position will be \$37,000 to \$42,000 depending on background and experience. Résumés and responses must be postmarked no later than 30 July 1988 to be considered. If offered employment, you must show you have the legal right to work in the U.S. For immediate consideration, please send curriculum vitae to:

**Cetus Corporation
Box KRA
1400 53rd Street
Emeryville, CA 94608**

We are an Equal Opportunity/Affirmative Action Employer.

PhD CYTOGENETICIST

Brooklyn's major genetic center is inviting applications from individuals to establish a CVS laboratory, an independent research program and collaborate with other investigators in basic clinical and research projects. Salary and appointment level depend upon qualifications. We are a primary affiliate of SUNY Health Science Center at Brooklyn. Applications should be sent to:

**Dr. Ram S. Verma,
Chief Division of Genetics
718-780-1401**

**The LONG ISLAND
COLLEGE HOSPITAL**



BROOKLYN, NY 11201

Equal Opportunity
Employer M/F/H



ICRISAT needs a Pigeonpea Agronomist (Eastern & Southern Africa) at Katumani, Kenya

To provide leadership to pigeonpea improvement research in the region with regard to constraint analysis, varietal adaptation, agronomic management, and crop protection for existing and new production systems. The selected candidate will work in close collaboration with pigeonpea/grain legume scientists and liaise with ICRISAT scientists in India and elsewhere to develop and transfer technology for catalyzing the commercial production of pigeonpea in eastern and southern Africa. Specific duties and responsibilities include, in addition, establishing a regional network of varietal adaptation trials, and when required, assist in agronomic aspects of ICRISAT-related research on groundnut and chickpea in the region.

Essential Qualifications: Should be a Ph.D. in any branch of Crop Science with relevant field research experience and willing to travel frequently in eastern and southern Africa, as well as regularly to ICRISAT in India and elsewhere as required. Should have good command of the English language.

A demonstrated ability to understand the interaction of biological, physical and socioeconomic factors to determine crop productivity and production, and experience with grain legumes, are desirable.

This is a contract position with an initial 2-year appointment at Katumani, approximately 13 km from Machakos town and 60 km from Nairobi, with excellent research facilities for dryland farming systems and dryland crops research improvement programs. Machakos is a small town with adequate medical and housing facilities. In addition, Nairobi enjoys a pleasant climate and is easily accessible to international airline connections.

Salary at principal staff level, according to qualifications and experience.

Send resume, including present salary level and names of three references immediately to: **The Director General, ICRISAT, Patancheru, A.P. 502 324, India.**

PRODUCT DEVELOPMENT OPPORTUNITIES

5 Prime → 3 Prime, Inc. has the following Research & Development positions available:

SENIOR SCIENTIST

Molecular Biology Product Development

Ph.D. in appropriate discipline. Those with post doctoral and industrial experience will be given preference. Position requires in-depth experience in molecular cloning and related rDNA techniques.

RESEARCH ASSOCIATE

Molecular Biology Product Development

M.S. or B.S. degree in biology with a minimum of 2 years experience in broad-based rDNA technology.

5 Prime → 3 Prime is an emerging biotechnology company that is building a core product development group. The company's operations are located in a new facility 35 miles southwest of Philadelphia. These positions offer long-term growth opportunities both professionally and financially.

Please send C.V. and 3 references to:

Director of Professional Recruitment
5 Prime → 3 Prime, Inc.
117 Brandywine Parkway
West Chester, PA 19380



5 Prime → 3 Prime, Inc.

STAFF POSITION

Synthetic Bio/Organic Chemist

The National Stable Isotope Resource at Los Alamos is seeking a dynamic Chemist/Biochemist to design and carry out bio/chemical syntheses of ^{13}C , ^{15}N and $^{17,18}\text{O}$ labeled nucleic acids, carbohydrates and amino acids. The successful applicant will also be expected to develop a nationally recognized research program in their own area of interest. In addition to a demonstrably excellent scientific background, the successful applicant must have the necessary verbal and writing skills, along with initiative and leadership qualities necessary to obtain research funding from external agencies. Applicants must have a PhD or equivalent training in chemistry, biochemistry or a related field and have experience in synthetic organic chemistry and/or microbial fermentations. Areas of required technical knowledge include LC/HPLC, g.l.c., ^1H and ^{13}C NMR spectroscopy. For additional information, contact James A. Fee, INC-4, C-345, Los Alamos National Laboratory, Los Alamos, NM 87545, 505-667-0774.

To formally apply, submit a detailed resume to Richard Garcia (MS P280), Personnel Services 80313-AM, Los Alamos National Laboratory, Los Alamos, NM 87545.

Affirmative Action/Equal Opportunity Employer
U.S. Citizenship Required

University of California

Los Alamos

POSITIONS OPEN

ASSOCIATE VICE PRESIDENT FOR RESEARCH UNIVERSITY OF MARYLAND GRADUATE SCHOOL, BALTIMORE

The Associate Vice President for Research provides important leadership for research development at the University of Maryland Graduate School for the Baltimore city and county campuses. This individual will report directly to the Vice President for Graduate Studies and Research and will be responsible for enhancing the research programs and activities of the university.

This full-time 12-month position is responsible for the development of policies, procedures and practices to encourage research and creative work, and to protect and advance the interests of the University in this area; representing the University to external funding agencies; promoting international research arrangements for the benefit of the University; and promoting cooperative research arrangements with government agencies.

Candidates for this position should have evidence of successful administrative/leadership abilities relevant to a university setting and research experience. Applicants should have earned a doctoral degree and have experience in research administration.

The Search and Screening Committee will begin its review of applications 18 July 1988. Appointment date and salary are negotiable. Applications should include a letter of interest, curriculum vitae and names of three to five references. Applications or nominations should be submitted to: **Dr. Barbara C. Hansen, Vice President for Graduate Studies and Research, University of Maryland at Baltimore, 660 West Redwood Street, Suite 257, Baltimore, MD 21201.** *An Equal Opportunity/Affirmative Action Employer.*

Middlebury College—**BIOCHEMIST.** The Department of Chemistry and Biochemistry of Middlebury College invites applications for a 2-year renewable appointment as visiting assistant professor in biochemistry beginning September 1988. Responsibilities will include teaching undergraduate biochemistry courses and supervision of undergraduate research in biochemistry. A Ph.D. in chemistry or biochemistry is required, and preference will be given to candidates with some prior teaching or research experience. Send résumé, a letter describing research interests, three letters of recommendation, and undergraduate and graduate transcripts by 15 July 1988 to: **J. A. Larrabee, Department of Chemistry and Biochemistry, Middlebury College, Middlebury, VT 05753.** *Middlebury College is an Equal Opportunity Employer.*

BIOLOGY AND BIOMEDICAL SCIENCES, ASSISTANT PROFESSOR. Tenure-track. Fall 1988. Ph.D. required, postdoctoral experience preferred. Expertise in comparative vertebrate physiology with capabilities in immunology. Teach physiology (animal/human) and immunology (undergraduate and graduate); develop active research program with external funding. Send curriculum vitae, statement of research plans, reprints, etc., and request three letters of recommendation, to: **Richard W. Pippen, Chair, Department of Biology and Biomedical Sciences, Western Michigan University, Kalamazoo, MI 49008.** *Affirmative Action/Equal Opportunity Employer.*

CLINICAL ASSISTANT/ASSOCIATE PROFESSOR CYTOGENETICIST

Applications are invited for assistant director of cytogenetics at the University of Michigan. A non-tenure track clinical faculty position in the Department of Pathology will be offered to a cytogeneticist certified or eligible for certification by the American Board of Genetics. Academically oriented individuals with a minimum of 2 years of experience with an active clinical cytogenetics program are encouraged to apply. Major responsibilities include co-directorship and supervision of an expanding clinical cytogenetics laboratory, development of an independent clinical or basic science research program and specialized teaching. Send curriculum vitae with names of three references to: **Thomas W. Glover, Ph.D., Director of Cytogenetics Laboratory, D1225, Box 0718, Ann Arbor, MI 48109-0010** or **Kenneth D. McClatchey, M.D., D.D.S., Director of Clinical Laboratories, 2G332 University Hospitals, Box 0054, Ann Arbor, MI 48109-0054.**

POSITIONS OPEN

The Children's Mercy Hospital in Kansas City, Missouri, is searching for a **CANCER PHARMACOLOGIST.** Our hospital is a 167-bed pediatric acute care center and is affiliated with the University of Missouri. This faculty position would be at an assistant or associate professor level. Responsibilities include monitoring chemotherapy levels in order to determine optimum treatment and perform research in cancer pharmacology. Laboratory and technician support provided. Qualified applicants will need to prove research accomplishments and evidence of independent research. Submit curriculum vitae to: **Dr. Arnold Freeman, Professor, Chief, Section of Hematology/Oncology, The Children's Mercy Hospital, 24th at Gillham Road, Kansas City, MO 64108.**

CHAIRPERSON, DEPARTMENT OF ANIMAL SCIENCE University of Florida. A Ph.D. in animal science or a related field, experience in research, teaching or extension, and potential to provide administrative leadership are required. Salary is open. Application deadline is 15 September 1988. Applicants should contact: **Dr. J. E. Moore, Department of Animal Science, University of Florida, Gainesville, FL 32611-0681.** *An Affirmative Action/Equal Opportunity Employer.*

DEAN WASHINGTON UNIVERSITY SCHOOL OF DENTAL MEDICINE WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI

The Washington University School of Dental Medicine has initiated a search for Dean. The School of Dental Medicine has been a leader in private dental education over the last century. A small school by tradition and design, the dental school consists of approximately 50 full-time faculty covering all the sub-disciplines and several graduate programs. We are seeking an individual whose background includes administration and research and previous leadership experience in academic dentistry. We are particularly interested in an individual who will apply innovative strategies to ensure the continued development and quality of an established dental school. Please send curriculum vitae and names of three references to:

**Dr. Philip D. Stahl
Chairman, Search Committee for
Dean of Dental School
Washington University Medical School
660 South Euclid Avenue, Box 8101
St. Louis, MO 63110**

DIRECTOR, OFFICE OF PROGRAMS, Environmental Research Laboratories (ERL): The National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce in Boulder, Colorado is seeking applicants for the position of Director, Office of Programs, ERL. ERL conducts an integrated program of research, fundamental technology development, and selected services with regard to the solar-terrestrial environment, upper and lower atmosphere, oceans, U.S. coastal area, and the Great Lakes. The Director, Office of Programs heads the staff office which provides policy and management advice on ERL's research programs on all aspects of program content, timing, coordination, resource needs; the analysis of program effectiveness and program alternatives; and the orchestration of ERL's program presentation and initiatives to higher level management. Manages and supervises, including promotion of Equal Employment Opportunity, three subordinate groups. Position is Federal Competitive Service, GS-15, Salary range: \$54,907 to \$71,377 per annum based on experience and scientific achievement. Qualifications: Candidates must have a bachelor's or higher degree in a physical science, engineering, or mathematics. In addition, candidates must show 3 years of professional experience in physical science research or program planning. At least 1 year must have been at the GS-14 or senior associate professor or equivalent level. Candidates must show knowledge of research methodologies and principles. Candidates must have supervisory experience or the ability to develop supervisory qualities. To apply: Contact: **B. J. Peterson, NOAA/MASC, Personnel Division, 325 Broadway, Boulder, CO 80303. Telephone: 303-497-5780 or FTS 320-5780** for application forms. Reference Vacancy Number 88-184. Position announcement closes 5 August 1988. *An Equal Opportunity Employer.*

POSITIONS OPEN

CHAIRPERSON DIVISION OF BASIC PHARMACEUTICAL SCIENCES COLLEGE OF PHARMACY XAVIER UNIVERSITY OF LOUISIANA

Full-time, tenure-track 12-month appointment at the associate or full professor level. The Division includes faculty from the disciplines of medicinal chemistry, pharmacology and pharmaceuticals. Applicant must have Ph.D. in basic pharmaceutical sciences with an excellent track record in teaching and research. The individual is expected to participate vigorously in research, provide leadership in developing a graduate program and participate in undergraduate teaching. Submit curriculum vitae, a list of three references and salary expectations by 31 August 1988 to: **Dr. Vimal Kishore, Chairman of the Search Committee, College of Pharmacy, Xavier University of Louisiana, New Orleans, LA 70125.** *Xavier University, a predominantly Black Catholic-affiliated University, is an Affirmative Action/Equal Opportunity Employer.*

DEAN COLLEGE OF MEDICINE UNIVERSITY OF OKLAHOMA

Applications are invited for the position of Dean, College of Medicine. The College is located in Oklahoma City, with a clinical campus in Tulsa, and is one of seven University of Oklahoma Colleges in the Health Sciences Center. Applications with demonstrated administrative skills and strong broad academic background should submit curriculum vitae before 1 September 1988 to:

**Dean's Search Committee
Office of the Provost
University of Oklahoma
Post Office Box 26901
Oklahoma City, OK 73190**

An Equal Opportunity/Affirmative Action Employer.

DIRECTOR OF CARDIOVASCULAR RESEARCH UNIVERSITY OF KENTUCKY

The Division of Cardiovascular and Thoracic Surgery seeks applicants for a new tenure-track position as Director of Cardiovascular Research. Applications will be considered from qualified cardiovascular physiologists, biomedical engineers, or biochemists with either a Ph.D. or M.D. degree. Postdoctoral training is a prerequisite with computer knowledge preferred. The development of a high quality basic science research program will be expected. Laboratory interests should relate either to ventricular function, myocardial blood flow, electrophysiology, and/or cellular metabolism. The successful candidate will be expected to develop an independent funding program. Senior applicants, therefore, should show a good record of grant support. Considerable opportunities for interaction with basic science departments exist. Please send curriculum vitae, representative reprints, and three letters of recommendation to: **W. Randolph Chitwood, Jr., M.D., Division of Cardiovascular and Thoracic Surgery, College of Medicine, University of Kentucky, Lexington, KY 40536.**

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

The University of Michigan Medical School, Department of Internal Medicine, has a position available for the **DIVISION CHIEF OF NEPHROLOGY.** This individual should be Board Certified in Internal Medicine and Nephrology and have a strong record of research accomplishments. Send inquiries and curriculum vitae to: **William N. Kelley, M.D., Professor and Chairman, Department of Internal Medicine, TC-3110, Box 0368, Ann Arbor, MI 48109.** *The University of Michigan is a non-discriminatory/Affirmative Action Employer. 40.*

EDITOR, SCIENTIFIC. Chapman and Hall seeks a highly motivated individual to join our growing publishing program. Current opening is for an editor to build an active publishing program in two specialties within any of the following fields: chemistry, earth sciences, mathematics. Applicant should have 2 years of publishing experience or an advanced degree in one field and an interest in pursuing a career in publishing. Competitive salary, travel, benefits. Cover letter, curriculum vitae, and references to: **William P. Germano, Editorial Director, Chapman and Hall, 29 West 35 Street, New York, NY 10001.**

- Group Leader
- Research Scientist

Formulation Technology

The Research and Development Division of Johnson & Johnson Baby Products Company has the following immediate openings in Skillman, NJ in its Formulation Technology Department. Innovation and creativity in solving technical problems through joint efforts with scientists from other departments are expected. Both positions require excellent skills in interpretation of scientific data and communications. Some background in analytical instrumentation is desirable.

Group Leader

The position will lead a group of 3-4 scientists. Responsibilities include physico-chemical characterization of new drug substances, e.g., isolation and evaluation of degradation products, kinetics and mechanisms of chemical degradation, skin permeation and diffusion, and dissolution studies. It also includes the development of prototype topical dosage forms to provide basic pharmaceutical research support to the clinical, preclinical and applied technology departments.

The successful candidate must have a PhD in Pharmaceutics, Physical Pharmacy, Physical Organic Chemistry or related area with minimum 3 years of experience in industrial or academic pharmaceutics research. Experience in carrying out physico-chemical studies of pharmaceutical materials in solutions and semi-solid dosage forms is essential. The position requires decision making and management skills as well as supervisory experience.

Research Scientist

Responsibilities include physico-chemical characterization of new drug substances, e.g., isolation and evaluation of degradation products, kinetics and mechanisms of chemical degradation, skin permeation and diffusion, and dissolution studies. The development of prototype topical dosage forms to provide basic pharmaceutical research support to the clinical, preclinical and applied technology departments is included. The position is also responsible for *in vitro* studies in support of IND, INA and Phase IV projects.

The successful candidate must have a PhD in Pharmaceutics, Physical Pharmacy, Physical Organic Chemistry or related area with 0-3 years' experience in industrial or academic pharmaceutics research. Experience in carrying out physico-chemical studies of pharmaceutical materials in solutions and semi-solid dosage forms is essential.

We offer competitive salaries, a comprehensive benefits package, and great potential growth opportunities.

For consideration, please submit current resume with salary requirements and indicating position of your interest to: Human Resources Department FT, Johnson & Johnson Baby Products Company, Grandview Road, Skillman, NJ 08558

Johnson & Johnson

BABY PRODUCTS COMPANY

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

"Leadership Beyond Compliance"

RESEARCH SCIENTISTS

SAN FRANCISCO BAY AREA

BIO-RAD LABORATORIES is a world leader in the fields of chemical analysis, chemical separation, and immunoassay. To continue the development of new products and technologies, we're seeking highly motivated, goal-oriented research scientists with expertise in the following fields:

R & D Chemists

These positions require two or more years' experience in development of hybridomas and monoclonal antibodies. Knowledge of synthetic peptide and/or recombinant antigens useful. MS/PhD in Cell Biology, Immunology or related field. Dept. #281-S0701.

Microbiology

Both Group Leader and Senior Scientist positions require experience in infectious disease, antigen analysis and microbiological assay development. Project management or supervisory experience in the leadership of a research group is desirable. An MS/PhD in Microbiology or related field plus at least three years' experience needed. Dept. #271-S0701.

Immunoassay Development

These positions require a strong background in the development of RIA, EIA and novel nonisotopic immunoassay for commercial development. Experience in novel assay systems and/or development of new assay formats desirable. An MS/PhD in Chemistry, Biochemistry or related fields plus two or more years of experience needed. Dept. #292-S0701.

Biochemist

Both Group Leader and Senior Scientist positions require experience in organic, peptide and protein chemistry. Strong record of accomplishments with background in diagnostic application desirable. MS/PhD in Organic Chemistry or related field a plus. At least three years' experience in industry is essential. Dept. #288-S0701.

For consideration, please submit resume, indicating appropriate department, to Bio-Rad Laboratories, Human Resources, 1000 Alfred Nobel Drive, Hercules, CA 94547. EOE.

BIO-RAD

Bio-Rad Laboratories

POSITIONS OPEN

FACULTY POSITION IN TUMOR IMMUNOLOGY

The Ohio State University College of Medicine invites applications for a tenure-track appointment for individuals with expertise in immune responses to cancer cells. The candidate's interests and background must allow for creative thinking and active participation in a multidisciplinary research program of antigen identification, protein engineering, and human vaccine development. Special consideration will be given to candidates with expertise in tumor antigen identification and mechanism for modulating in vivo and in vitro responses to active immunization.

The candidate must have a Ph.D. or M.D. with at least 3 years of postdoctoral experience. The candidate should have demonstrated strong research accomplishments and ability to obtain grant support. Appointments will be commensurate with background. Salaries are competitive with excellent benefits. New laboratory facilities and start-up funds are available. Preceptorship and teaching responsibilities are available for graduate and postdoctoral training. Departmental affiliation will be determined by the applicant's credentials.

Facilities are located on the Ohio State University campus. Reasonable housing, excellent schools, and a growing community complement the challenging academic environment. Qualified candidates should send their curriculum vitae to: **Vernon C. Stevens, Ph.D., Ohio State University Hospital, 1654 Upham Drive, Columbus, OH 43210.** The Ohio State University is an Equal Opportunity Employer. Applications from women and minority candidates are especially encouraged. Deadline for applications is 1 September 1988.

IMMUNOLOGIST

The Department of Pathology of the Emory University School of Medicine is interviewing for a tenure-track position (assistant or associate professor) with appointment as associate director, Histocompatibility and Immunogenetics Laboratory. Emory University has developed major clinical transplantation programs and seeks to expand the level of research activities related to transplantation immunology.

Qualified candidates may be an M.D. or Ph.D. with expertise in either cellular immunology and lymphocyte cloning, or in molecular genetics. The individual also should be competent in standard laboratory immunochemical procedures. A major research goal of the Transplantation Immunology Laboratory, directed by **Glenn E. Rodey, M.D.**, is to identify immune mechanisms that regulate alloimmunization. Applicants are expected to undertake a program of research in transplantation immunology and to interact with and support other scientists working with projects related to immunoregulation.

Please send a description of research interests, curriculum vitae, and the names of three references to:

Dr. Kenneth W. Sell
Chairman

Department of Pathology and Laboratory Medicine
Emory University School of Medicine
703 WMB
Atlanta, GA 30322

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

IMMUNOLOGIST

The Clinical Research Center for Periodontal Diseases and the Dental Research Institute of the University of Minnesota invite applications for a tenure-track faculty position to pursue independent research and collaboration with CRCPD and DRI investigators. Applicants with outstanding programs or promise in any area of modern immunology are encouraged to apply. Candidate must have a D.D.S. degree with 5 years of research experience or a Ph.D. and postdoctoral experience. Excellent laboratory facilities and start-up funds are available. Applicants should submit curriculum vitae, a statement of professional goals and possible collaboration with CRCPD, and the names of three references by 15 July 1988 (deadline extended) to: **Dr. Mark C. Herzberg, Chairperson, Immunologist Search Committee, School of Dentistry, 17-164 Moos Tower, University of Minnesota, Minneapolis, MN 55455.** The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

SCIENTISTS

Genencor, Inc. is a dynamic and growing biotechnology company located in South San Francisco, California. We specialize in the research and development of enzymes and enzyme processes as well as the production of industrial enzymes. We are actively recruiting for two positions in our Research and Development Departments.

SCIENTIST: Design and conduct research of the genetic and physiologic factors which enhance strain production. Utilize classical and molecular genetic approaches to optimize strain performance. Working with our fungal molecular genetics staff, scale up eukaryotic production processes to laboratory fermenters. Requires 1) Ph.D. in Genetics, Microbiology, Biochemistry or a related field; 2) up to three years of related post doctoral experience with emphasis on the genetic factors controlling gene expression in yeast or fungi; 3) demonstrated expertise in strain development by classical genetics and mutagenesis; and 4) commitment to product-oriented research within a strong team environment. Experience with the regulation of complex multi-enzyme systems is preferred. Current working knowledge of fungal molecular biology or experience with naturally secreted proteins is desired. Refer to Dept. DC-48.

POST DOCTORAL RESEARCHER: Identify and isolate enzymes which have agricultural applications in herbicides and fungicides. Conduct experiments with plants and pathogenic fungi. Requires 1) Ph.D. in Biochemistry with a background in plant pathology or physiology; or 2) Ph.D. in Plant Pathology/Physiology with a biochemistry background. Experience working with plants and pathogenic fungi is essential. Refer to Dept. AJP-51.

We offer a generous compensation and benefits package combined with the challenge and opportunity to make a significant contribution to our outstanding organization. To apply, please send your curriculum vitae to **GENENCOR, INC., 180 Kimball Way, South San Francisco, CA 94080.** Attn: Human Resources. Please note appropriate Dept. Genencor is an equal opportunity employer.

GENENCOR

Microbial Genetics Molecular Genetics

The Department of Biological Process Sciences at Smith Kline & French Laboratories in suburban Philadelphia, PA, is seeking an outstanding individual to fill a challenging Ph.D. level position in the Fermentation Genetics Section.

The successful candidate will:

- Use classical and molecular genetics techniques to design, develop, characterize and evaluate new recombinant microorganisms which will be used to maximize production of novel gene products.
- Conduct research in areas such as the study of host growth characteristics, high level gene expression at high cell density, product stability and solubility, export of recombinant products, and novel gene expression induction systems.
- Gain recognition throughout the scientific community by publishing scientific results and participating in national and international meetings.

Candidates are required to have:

- A Ph.D. in Molecular Biology/Microbiology or related area and 1-6 years relevant post-doctoral experience.
- Excellent laboratory skills in molecular and classical genetics techniques with experience in heterologous gene expression in microbial systems highly desirable.
- A sound record of publication in major scientific journals.
- Excellent communication and interpersonal skills and a strong desire to work as an innovator, leader, and member of a research group and collaborative teams.

We offer an excellent compensation, benefits and relocation package as well as opportunities for personal and professional growth. It is SmithKline Beckman's policy not to employ individuals who use any illegal drugs or prescription drugs without a medical prescription. Therefore, candidates should be prepared to take a drug screening test. For confidential review, please forward your C.V. and names of three references to: **Robert F. Obst, Manager, Personnel Relations, R0131, Smith Kline & French Laboratories, Research & Development, P.O. Box 1539, King of Prussia, PA 19406-0939.** We are an Equal Opportunity Employer, M/F/H/V. NO PHONE CALLS, PLEASE.

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POSTDOCTORAL RESEARCH ASSOCIATE

(Temporary, up to two years)

The Medical and Health Sciences Division of Oak Ridge Associated Universities is seeking a postdoctoral research associate to provide research support in the areas of protein chemistry and immunochemistry for a DOE funded project. "Radiolabeled Monoclonal Antibodies to Tamarin Colon Cancer." Candidates should possess a Ph.D. in biochemistry, chemistry, pharmacology, or a related field.

In addition to a salary competitive with the private sector, ORAU provides assistance with moving expenses.

Please forward your curriculum vitae to:



Employment Office
Oak Ridge Associated Universities
P.O. Box 117
Oak Ridge, TN 37831-0117

EEO

RESEARCH SCIENTISTS

ICRF Clinical Oncology Unit
Institute of Molecular Medicine
John Radcliffe Hospital, Oxford

Applications are invited for two posts of Research Scientist, a six year tenure track position, in the new ICRF Clinical Oncology Unit, Oxford. Successful applicants will lead a small team of research workers within a group comprising approximately 17 scientific and technical staff. The group will work in laboratories situated within the Institute of Molecular Medicine. The honorary Director of the Unit is Professor Adrian Harris and the Senior Scientist in the Laboratory is Dr I. D. Hickson. Existing research interests in the Unit include cloning human DNA repair genes, drug resistance mechanisms, and growth factors and their receptors.

Applicants should ideally have research interests in a related field, although this is not essential. Applicants should be able to take up the position in 1989.

Salary will be dependent on age and experience and in the range of £ 14,000-£ 18,000.

Applications should be made by sending a full CV and the names and addresses of three referees to Mrs. P. Harwood, Recruitment Officer, Imperial Cancer Research Fund, Lincoln's Inn Fields, London WC2A 3PX by 22nd July 1988.

Informal enquiries can be made either to Professor Harris or Dr. Hickson on (091) 2325131 ext 24363.

Smoking is strongly discouraged on the fund's premises.

**I M P E R I A L
CANCER RESEARCH FUND**

CHAIRPERSON

*Department of
Pharmacology*

Duke University Medical Center

Duke University is seeking candidates for the position of Professor and Chairperson of the Department of Pharmacology. Responsibilities include providing leadership for research and teaching activities in the School of Medicine. Minimal qualifications include an earned doctorate in a related discipline, a distinguished record of scholarship, administrative experience in an academic environment and a demonstrated ability to work collaboratively in a university and academic medical center and with external constituencies.

This position will be available in Fall 1988.

Applicants should send a copy of their curriculum vitae with references and other credentials to: **Pharmacology Search Committee, DUKE UNIVERSITY MEDICAL CENTER, Box 3701, Durham, NC, 27710.**

**Duke
University**



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Affirmative Action Employer

Plant Physiologist

Chevron Chemical Company is one of the nation's leading producers of fungicides, herbicides and other agricultural and garden chemicals sold under the Ortho name. Currently, our Agricultural Chemicals Division is seeking a Plant Physiologist, who has a PhD and working knowledge of pesticides, to join our new and stimulating research environment located in Richmond, CA.

As a vital member of our Inventive Research Group, you'll concentrate on pesticide penetration and transport and mode of action studies, as well as maintain close interaction with other biologists, biochemists and synthesis chemists. You'll have the creative latitude to design and direct laboratory and greenhouse research programs, as well as provide guidance for field evaluation programs.

In addition to a multidisciplinary environment, we provide an attractive salary and benefits package. For immediate consideration, candidates should send resumes to: Chevron Chemical Company, Human Resources, P.O. Box 4010, Richmond, CA 94804-0010. An equal opportunity employer.



POSITIONS OPEN

FACULTY POSITION IN MOLECULAR BIOLOGY/REPRODUCTIVE BIOLOGY UNIVERSITY OF MISSOURI

The University of Missouri is seeking a tenure-track assistant/associate/full professor (80% research, 20% teaching) in the University's Food for the 21st Century Program. The successful candidate will be expected to conduct basic research in a project that applies advanced biotechnology procedures to an area of reproductive biology pertaining to the mammalian female and will join an established group of molecular biologists/reproductive physiologists in the Animal Sciences Research Center. An applicant should have a Ph.D. and at least 2 years of postdoctoral experience in one of the following areas: immunobiology, developmental biology, molecular endocrinology, gene transfer, protein chemistry. Applications will be accepted until 1 September 1988 or until an acceptable applicant is recruited. Applicants should send curriculum vitae, names of three references and a statement of research interests to: **Dr. R. M. Roberts/Dr. B. N. Day, Department of Animal Sciences, University of Missouri, Columbia, MO 65211.** The University of Missouri is an Affirmative Action/Equal Opportunity Employer.

FACULTY POSITION IN SOIL CHEMISTRY

Applications are invited for a tenure-track soil chemistry position at the associate professor or professor level. Successful candidate must have demonstrated strengths in research and teaching to support appointment to this tenured position. Candidates with strong credentials in soil physical chemistry or chemistry of organics in soils and waters are encouraged to apply, however, outstanding candidates in all areas of soil chemistry will be considered. Potential candidates are requested to submit curriculum vitae, a statement of teaching/research interests, any supporting documentation, and names, addresses and telephone numbers of at least three references to: **L. J. Lund, Chairman, Department of Soil and Environmental Sciences, University of California (UC), Riverside, CA 92521.** Applications will be accepted until 15 September 1988 or until the position is filled. UC is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITIONS

The University of North Carolina at Chapel Hill invites applications for two junior or senior faculty positions in the Department of Cell Biology and Anatomy. Appointees will be required to have a funded research program in any modern area of biomedical research at the cellular or molecular level and to teach in our medical histology course. *Women and minorities are encouraged to voluntarily identify themselves.* Send curriculum vitae, a brief description of research plans, and the names of three references by 1 September 1988 to: **Dr. Charles R. Hackenbrock, Chair, Department of Cell Biology and Anatomy, School of Medicine, 108 Swing Building, CB#7090, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7090.** An Equal Opportunity/Affirmative Action Employer.

HEAD, Department of Chemistry and Biochemistry, Utah State University. Utah State University seeks an outstanding leader for its teaching and research programs in the Department of Chemistry and Biochemistry. The Head of the Department is the chief administrative officer with major responsibilities in administrative, budgetary, and promotion decisions. In addition to administering the department, the head will be expected to conduct a vigorous, well-funded research program. Candidates should possess an established reputation in research and have academic teaching experience. Administrative experience or demonstrated leadership potential preferred. The head will hold the rank of Professor with tenure. Interested applicants should send a letter of interest, curriculum vitae, and names and addresses of three references by 30 October 1988 to: **Professor D. L. Comins, Chairman, Search Committee, Department of Chemistry and Biochemistry, Utah State University, Logan, UT 84322-0300.** Telephone: 801-750-1627. Inquiries and applications will be kept confidential. Applications will be accepted until the position is filled. Utah State University is an Affirmative Action/Equal Opportunity and IRCA Employer.

POSITIONS OPEN

GEOGRAPHIC MEDICINE—The University of Alabama at Birmingham is seeking candidates for **DIVISION DIRECTOR** of Geographic Medicine. Candidates should have demonstrated a high order of leadership, clinical competence and a clear commitment to academic excellence so that appointment as a professor will be in order. Qualified applicants should submit curriculum vitae to: **The Chairman, Department of Medicine, J. Claude Bennett, M.D., Chairman, Department of Medicine, UAB Station, Birmingham, AL 35294.** An Equal Opportunity/Affirmative Action Employer.

HEAD DEPARTMENT OF OBSTETRICS AND GYNECOLOGY UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE AT CHICAGO

The University of Illinois College of Medicine at Chicago invites applications and nominations for the position of Head of its Department of Obstetrics and Gynecology and Chief of the Obstetrics and Gynecology Service at the University of Illinois Hospital. Located in the Westside Medical Center in Chicago, the college has over 800 medical students and is immediately adjacent to the University Hospital. The College is affiliated with four community hospitals in the greater Chicago area.

Candidates should be Diplomates of the American Board of Obstetrics and Gynecology (or equivalent), have had substantial scholarly productivity in the field and have demonstrated ability to provide dynamic leadership in administering a comprehensive program of patient care, education, and research in obstetrics and gynecology.

Interested individuals should send curriculum vitae to:

Lloyd M. Nyhus, M.D.
Chairperson, Search Committee
Professor and Head
Department of Surgery
University of Illinois
College of Medicine at Chicago
840 South Wood Street
Chicago, IL 60612

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

INSTRUCTOR position available for Ph.D. with experience in the molecular biology of growth factor receptors. The salary will be \$25,000, plus fringe benefits. Minimum experience: Ph.D. and postdoctoralship in molecular biology. Send complete curriculum vitae, a brief statement of research interests, and three letters of recommendation to: **Bruce M. Boman, M.D., Ph.D., Director, Creighton Cancer Center, Creighton University, California at 24th Street, Omaha, NE 68178.** An Equal Opportunity/Affirmative Action Employer.

MOLECULAR BIOLOGIST FACULTY POSITION The University of Connecticut Health Center. The Department of Microbiology is seeking to fill a tenure-track position, preferably at the rank of assistant or associate professor, starting September 1989. Candidates with expertise in genetics, developmental biology or protein structure-function are encouraged to apply. Preferred areas of research interest include but are not limited to: cell division, differentiation and development, protein-nucleic acid interactions, mechanisms of growth control, and membrane/organelle biogenesis. Applicants should have a doctoral degree and at least 2 years of postdoctoral experience with clear potential to develop a productive, high quality research program, and the ability to be an effective teacher.

An application should consist of curriculum vitae including bibliography, a summary of past research accomplishments, a brief description of future research plans, copies of most significant publications, and names of three or more individuals willing to write letters of recommendation. It should be addressed to: **Dr. M. J. Osborn, Head, Department of Microbiology, L 2034, University of Connecticut Health Center, Farmington, CT 06032.** The deadline for applications is 1 December 1988. An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

MANAGING EDITOR

Environment, a monthly magazine focusing on issues of science and international public policy, seeks an experienced managing editor in Washington, D.C. This position with a nonprofit publisher involves a broad range of responsibilities, including acquisition and evaluation of articles, supervision of substantive and stylistic editing, and direction of production staff and free-lance contributors. The managing editor also helps to set editorial policies and directions for the magazine, represents it at scientific meetings, and explores ways to promote it more widely. Working closely with an editorial board of three executive editors, the managing editor is ultimately responsible for the content of the magazine.

Successful candidates will offer documented achievements in magazine management, familiarity with the environmental science community, and solid background in editing and production. Send résumé, samples of work, and salary history to: **Editorial Director, Heldref Publications, 4000 Albemarle Street, NW, Washington, DC 20016.**

MEMBRANE BIOPHYSICS/PATHOBIOLOGY POSTDOCTORAL ASSOCIATE

Two-year support available immediately to study ion channels, by patch-clamp and bilayer reconstitution, from cystic fibrosis cultured human cells.

Enthusiastic and inquisitive Ph.D. in biological sciences immediately needed to join ongoing exciting project. Minimum commitment of 2 years. Salary: \$21,000 per year.

Closing date: 1 August 1988 or until filled. Contact: **Dr. Raphael Gruener, 602-626-6519; Physiology Department, University of Arizona, College of Medicine, Tucson, AZ 85724.** An Equal Opportunity/Affirmative Action Employer.

NUTRITION—ASSISTANT PROFESSOR UNIVERSITY OF NEW HAMPSHIRE

Assistant professor of nutrition with special interest in exercise science and/or endocrine metabolism (50% teaching; 50% research). Teaching duties: Each year, teach upper level course in either normal or clinical nutrition and graduate level course in area of expertise. Research: Develop program in nutrition and exercise science that will attract external funding. Collaborate with other faculty in ongoing research in exercise physiology and endocrine or lipid metabolism. Qualifications: doctoral degree in nutrition or other related discipline; postdoctoral experience preferred but not essential; teaching experience important. Tenure-track academic year position with summer salary guaranteed for first 2 years. Salary commensurate with qualifications and experience. Ideal location near ocean inlet, scenic semi-rural area. Department has 25 faculty, 20 graduate students and 300 undergraduate majors. To apply, send letter of application, curriculum vitae, all academic transcripts and three letters of recommendation by 29 July 1988 to: **Dr. Anthony Tagliaferro, Search Committee Chair, Human Nutrition Center, University of New Hampshire, Durham, NH 03824.** UNH is an Affirmative Action/Equal Employment Opportunity Employer.

NMR SCIENTIST

The Pittsburgh NMR Center for Biomedical Research [under the auspices of Carnegie Mellon University (CMU) and the University of Pittsburgh (Pitt)] has an opening for an NMR Scientist. The center has a Bruker BIOSPEC II 4.7-tesla NMR system with a 40-cm bore superconducting magnet for multinuclear NMR imaging and in vivo spectroscopic studies using animal models. The position requires a Ph.D. or equivalent, and extensive experience in NMR techniques. The appointee will participate in a multidisciplinary research program involving departments of biology, chemistry, computer science, medicine, surgery, and physics, and will have opportunities to carry out collaborative research. This is a staff appointment and salary depends on experience and qualifications. Interested persons should send curriculum vitae and names of three references to: **Dr. Chien Ho, Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, 4400 Fifth Avenue, Pittsburgh, PA 15213.** CMU and Pitt are Affirmative Action/Equal Opportunity Employers.

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XOMA Corporation is a world leader in the development and clinical testing of therapeutic targeted pharmaceuticals for human use. We currently have monoclonal antibody-based products in FDA-authorized clinical trials for the treatment of gram negative sepsis, bone marrow transplantation, melanoma and colorectal cancers, and detection of melanoma.

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IMMUNE RELATED DISORDERS

•Director of Molecular Genetics

Reporting to the V.P. Preclinical, will direct a newly-created department responsible for developing and implementing research programs to genetically alter monoclonal antibodies and to clone and express ribosomal inhibitory proteins, growth factors and other targeted therapeutic proteins.

Requires a Ph.D. in Molecular Biology, Molecular Genetics or other related discipline, and 3-5 years industrial experience preferred in cloning, sequencing, and expression of recombinant DNA. Experience/interest in mammalian/yeast expression, protein structure/function relationships, molecular modelling and molecular immunology desirable.

•Research Scientist

Will be a key member of the newly formed team altering antibodies using recombinant DNA techniques. In addition, will participate in cloning and expression of other proteins such as ribosomal inhibitory proteins, growth factors and other targeted therapeutic proteins.

Requires BS or MS degree, and 2-4 years industrial experience in cloning and sequencing of DNA. Knowledge and experience in site-directed mutagenesis and antibody screening procedures such as ELISA is desirable. Position may include a temporary assignment to the United Kingdom for up to 6 months.

TECHNICAL DEVELOPMENT

•Sr. Process Engineer/Scientist

Reporting to the Director, Pilot Plant, will be responsible for development and scale-up of production processes for monoclonal antibodies from pilot plant through manufacturing scale. Will develop cost effective process technology, and be responsible for optimization, validation and continuing operation of purification processes.

Requires Ph.D. in Chemistry, Biochemistry, Chemical Engineering or related field, and 3-5 years industrial experience in large scale protein isolation, especially chromatography and membrane separation. Familiarity with cGMP's desirable.

REGULATORY AFFAIRS

•Director of Regulatory Affairs

Reporting to the V.P. Medical & Regulatory Affairs, will be responsible for directing all regulatory activities, including development and implementation of strategies for FDA and other Board of Health approvals. Directs regulatory team to coordinate IND and PLA submissions and ensure optimal interaction with FDA and other Boards of Health.

Requires BS/MS in scientific discipline, and 5-8 years pharmaceutical/biotechnology industry experience in regulatory affairs. Must have filed IND's and PLA's/NDA's.

XOMA offers competitive salaries and comprehensive benefits in an outstanding work environment. For consideration, please forward your C.V. and salary history to: Director of Human Resources, XOMA Corporation, 2910 Seventh Street, Berkeley, CA 94710. EEO.



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CORPORATION

**American Association for the
Advancement of Science
Program on Science, Arms Control,
and National Security**

VACANCY

The American Association for the Advancement of Science is seeking a **Senior Program Associate** for its Program on Science, Arms Control, and National Security.

The **staff responsibilities** of the successful candidate will include activities in the following areas: assisting with the Program's publication series; planning and execution of major conferences, seminars, and symposia; fund-raising efforts; and assisting with the Program's long-range planning, to include identifying substantive areas in this field that can be addressed effectively by the AAAS.

Qualifications of the successful candidate will include the following: (1) an understanding of technical and policy related arms control and national security issues, as demonstrated in previous work experience; (2) a M.A. (or equivalent combination of education and experience) in the physical sciences or engineering; (3) excellent written and oral communication skills; (4) experience working with the Congress, federal agencies, industry, universities and/or foundations; (5) administrative experience; and (6) ability to interact effectively with other Program staff and advisory committee members.

Salary to \$30,000 contingent upon qualifications.

Please send letter of interest, resume and salary requirements to: Debra Wright, AAAS, 1333 H St., N.W., Washington, D.C. 20005, EOE

**RESEARCH ASSOCIATE
EXPERIMENTAL PATHOLOGY**

Amgen is a dynamic and growing organization producing products for human health care through applied biotechnology. Our continued growth and development has created an immediate opportunity for a Research Associate in our Experimental Pathology Group.

Responsibilities for this position will include cell culture, immunoassays and some animal handling.

Qualified applicants must have a BS or MS in Biochemistry, Cell Biology or Immunology with a minimum of 2 years' research experience. An interest in IN VITRO and IN VIVO models of growth factor mediated tissue repair and inflammation is desirable. Specific knowledge of cell based assay systems and some knowledge of protein chemistry are desirable.

Amgen offers a stimulating and challenging research environment as well as an excellent compensation and benefits package. Our location, about an hour northwest of Los Angeles, offers the best in Southern California living.

Interested candidates with the required background should send a resume, including references, in confidence to:

Recruitment, Dept. #320

AMGEN

1900 Oak Terrace Lane

Thousand Oaks

CA 91320

Equal Opportunity Employer



Biogen specializes in the application of Biotechnology to the development of Human Therapeutics. Located in Kendall Square, Cambridge, MA, we have the following immediate opening in the Process Development Group:

PROTEIN BIOCHEMIST

This position reports to the Director of Process Development; responsibilities include:

- developing methods for large scale production of proteins intended for clinical trials
- investigate performance of production processes with regards to purity, yield, reproducibility
- assist in developing stable pharmaceutical formulations for bulk drug and dosage form

A PhD in protein purification, protein chemistry, or biophysical chemistry is required. Postdoctoral/industrial experience in practical aspects of protein purification, refolding, or characterization is preferred.

Biogen offers an excellent benefits and compensation package, including health and dental insurance, tuition reimbursement, and relocation assistance. Please send your resume to Department PDG-Sci-6/88, Human Resources.

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Life Sciences Technology

Ciba Corning Diagnostics Corp. is a world leader in the development and manufacture of in-vitro diagnostic systems. Our worldwide commitment to advancing life sciences technology begins with a solid commitment to our own people. We provide the kind of dynamic career challenges and rewards you would expect from a world leader. If you are looking for a place to really grow, explore the following opportunities. Join us. And bring your skills to Life Sciences technology.

Within our Technology Group the Sensor Research and Development Department is responsible for planning and developing the next generation of biosensors for the clinical diagnostics market. We have the following opportunities:

■ **Sr. R&D Scientist — Reagent Systems**

This individual will provide technical leadership in developing new reagents to be used in association with new sensors and clinical chemistry instrumentation. The successful candidate will have a Ph.D. in biochemistry/clinical chemistry with a strong emphasis on enzyme surface chemistry and the ability to develop enzyme-based biosensors and calibrators. 3-5 years' industrial experience is required. Experience in electrochemistry is desirable.

■ **Sr. R&D Scientist — Materials Science/Separation Polymers**

This individual will provide technical leadership in the area of membrane technology including evaluating methodology to ensure a marketable product. The successful candidate will have a Ph.D. in polymer chemistry/membrane-based separation technology/materials science with 5-7 years of work experience in membrane casting, extrusion and materials separation. Prior experience in the actual synthesis of polymers and organic synthetic chemistry are required.

■ **Sr. Research Scientist — Polymer Chemistry/ Electrochemistry**

This individual will provide technical leadership in the area of membrane-based electrochemical sensors and will be involved in creating sensor methodologies to ensure a marketable product. The successful candidate will have a Ph.D. in polymer chemistry or material science with at least 2-3 years of work experience. Prior experience in chemical modification and physiochemical characterization of polymers and in electrochemical analytical techniques are required.

■ **R&D Scientist — Electrochemistry**

This individual will provide technical expertise in research and development of novel electrochemical sensors. The successful candidate will have an M.S. with 5-7 years of work experience. Prior experience with electrochemical and analytical techniques in particular with ion-selective electrodes are required.

We are located about 20 miles southwest of Boston in an attractive New England location. We offer excellent salaries and benefits and encourage qualified individuals to respond to Carol Sander, Ciba Corning Diagnostics Corp., 63 North Street, Medfield, MA 02052.

Ciba Corning is an equal opportunity employer, m/f/h/v.

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Ciba Corning Diagnostics Corp.

Research Scientists

Genentech, Inc., a leader in the field of biotechnology, has the following opportunities available.

Biological Assay Scientist

An individual with a strong background in cell biology, biochemistry and assay development is needed to develop cell-based assays for the bioactivity of recombinant proteins. The successful candidate should possess a PhD in a relevant discipline, and a minimum of 2 years' postgraduate and hands-on experience with cell culture and receptor binding assays. Experience with the development of immunoassays is also desirable.

Hybridoma Scientist

An individual with experience generating hybridomas and characterizing monoclonal antibodies is needed to provide monoclonal antibodies to recombinant proteins for assay development and in order to identify key regions of molecules. Requirements include a PhD in a relevant discipline, and a minimum of 2 years' postgraduate and hands-on experience with new hybridoma techniques, antibody generation, assay development and immunochemical techniques.

Immunochemistry Scientist

An individual with a background in protein purification and characterization is needed to develop sensitive immunochemical assay methods for detection and quantitation of host cell impurities in recombinant DNA derived proteins. Requirements include a PhD in Immunochemistry or Biochemistry and a minimum of 2 years' relevant postdoctoral experience.

Genentech, Inc. offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. For consideration, please send your resume to Victor Smallberg, Human Resources Department E.P., Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. An equal opportunity employer.

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POSITIONS OPEN

FOX CHASE CANCER CENTER MOLECULAR ONCOLOGY FACULTY POSITIONS

The basic science and clinical components of the Fox Chase Cancer Center are collaborating in the expansion of a program in Molecular Oncology that will embrace a spectrum of interests, from basic to applied cancer research. The Search Committee now invites applications from senior investigators to lead this effort and from young investigators to participate in it. All positions are tenured or in tenure-track. Please send curriculum vitae and a letter describing current scientific interest to: **Dr. Alfred Knudson, Chairman, Molecular Oncology Search Committee, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111. The Center is an Equal Opportunity Employer.**

THE UNIVERSITY OF CALGARY NEUROPHYSIOLOGIST— THERMOREGULATION AND CARDIORESPIRATORY CONTROL

Applications are invited for an experienced neurophysiologist to work within the Reproductive Medicine Research Group in the Department of Medical Physiology at The University of Calgary. Applicants will be required to join a multidisciplinary group carrying out fundamental biomedical research on thermoregulation and cardiorespiratory control in the fetus and newborn. The applicant should have experience in several of the following areas: neurophysiology of sleep, thermoregulation and/or cardiorespiratory control. In addition, the applicant should have expertise in microperfusion techniques including push-pull perfusion and microdialysis perfusion as well as techniques for analyzing neuroactive substances (i.e., RIA, HPLC-EC). The applicant should have a M.D. and/or Ph.D. in physiology or a closely related area and will be expected to develop an independent research program as well as collaborate with members of the Group.

Salary and rank will be in accordance with qualifications and experience and will be commensurate with that applying within The University of Calgary.

This position will be funded by a successful application for a scholarship from the Alberta Heritage Foundation for Medical Research. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

Requests for further information, and applications including curriculum vitae and the names of three referees should be submitted by 1 August 1988 to:

**Dr. James E. Fewell, Chairman
Reproductive Medicine Research Group
The University of Calgary
Health Sciences Centre
3330 Hospital Drive N.W.
Calgary, Alberta T2N 4N1**

PATHOLOGY AND MICROBIOLOGY: The University of Nebraska Medical Center is seeking a **CLINICAL CHEMIST**, assistant-associate professor, with M.D. degree and board certification in anatomic and clinical pathology with special interest in clinical chemistry and demonstrated academic productivity by publications. Curriculum vitae and three letters of recommendation to: **David T. Purtilo, M.D., Chairman, Pathology and Microbiology, UNMC, 42nd and Dewey Avenue, Omaha, NE 68105. Applications accepted to 1 November 1988. An Equal Opportunity/Affirmative Action Employer.**

PLANT MOLECULAR BIOLOGIST

The Forest Biotechnology Centre at B.C. Research is seeking a plant molecular biologist to work on genetic transformation of forest species and forest molecular genetics. This is a senior research scientist position with good opportunities for career advancement. The centre has established expertise in tissue culture of these species and has initiated *Agrobacterium*-based transformation systems. The successful candidate will hold a Ph.D. and should have at least 2 years of postdoctoral experience in plant molecular or plant-microbe interactions. A working knowledge of routine recombinant DNA techniques is essential. The position will involve working with a dynamic group of scientists from a variety of disciplines including molecular and biochemical areas. Send curriculum vitae and names of three references to: **Dr. Ben Sutton, Forest Biotechnology Centre, B.C. Research Corporation, 3650 Westbrook Mall, Vancouver, B.C., Canada V6S 2L2.**

POSITIONS OPEN

NUTRITION ASSISTANT PROFESSOR AND POSTDOCTORAL POSITION

The University of Medicine and Dentistry of New Jersey-School of Osteopathic Medicine is currently seeking: (i) Tenure-track assistant professor in the area of nutrition and/or metabolism. The position requires a Ph.D. degree or equivalent. Applicants should have at least 1 year of postdoctoral training and show promise of a vigorous research program. (ii) A postdoctoral position for research using stable isotopes for investigating problems in nutrition and metabolism. This position will be funded through an NIH-funded training program in clinical nutrition at University of Pennsylvania. Applications should include curriculum vitae, reprints, a statement of research experience and future plans, and the names of three references. This information should be forwarded to: **T. P. Stein, Ph.D., UMDNJ-School of Osteopathic Medicine, Center for Aging (S), 401 Haddon Avenue, Camden, NJ 08103. Affirmative Action/Equal Employment Opportunity Employer M/F/H/V.**

ORGANIC / MEDICINAL / PHARMACEUTICAL CHEMIST with a Ph.D. and 0 to 3 years of postdoctoral experience in chemical synthesis is needed to prepare new antiviral and anticancer compounds. Knowledge of basic synthetic reactions and experience with spectrophotometric and chromatographic techniques are required. This is a 2-year appointment starting around 1 September 1988. Please send résumé and names of references to: **Dr. Andre Rosowsky, Division of Cancer Pharmacology, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115. An Equal Opportunity/Affirmative Action Employer.**

PHYSICAL OCEANOGRAPHER/University of Maryland (UM)/Horn Point Environmental Laboratories. Applications are invited for a tenure-track position at the assistant or associate professor level. Areas of interests include all disciplines in physical oceanography, preferably in the field of, but not limited to, theoretical and observational research on ocean dynamics, continental shelf processes and estuarine circulation. The successful candidate is expected to develop a strong and independent research program. Opportunities exist for teaching and student training in a developing graduate program. Salary commensurate with experience.

Please send curriculum vitae, summary of research interests, names, addresses, and telephone numbers of four referees by 15 September 1988 to: **Dr. Shenn-Yu Chao, Box 775, Horn Point Environmental Laboratories, Cambridge, MD 21613. Telephone 301-228-8200. UM is an Affirmative Action/Equal Opportunity Employer.**

The University of Minnesota Department of Radiology has a temporary, non-regular, neuroscience **POSTDOCTORAL ASSOCIATE POSITION** available 30 July 1988. The duties will be to study the regional distribution of potential neuron-specific radiotracers in the rodent and primate brain. Minimum requirements include a Ph.D. and experience in neuroanatomic techniques including cryostat sectioning, fixing, staining and autoradiography a must. The candidate should be familiar with HPLC, image analysis and small animal handling. Salary is negotiable and competitive, and is dependent upon past scholarly activity and post-Ph.D. experience. Send résumé and references to: **S. M. N. Eftang, Ph.D., Department of Radiology, University of Minnesota Medical School, Box 382 UMHC, 420 Delaware Street, SE, Minneapolis, MN 55455. The University of Minnesota is an Equal Opportunity and Affirmative Action Educator and Employer and specifically encourages applications from women and minorities.**

POSTDOCTORAL POSITION available 1 September 1988 for studies on the formation, stability, and functional capacity of retinal ganglion cell projections to non-optic and other ectopic sites in the brain of the frog during optic nerve regeneration. Experience in neuroanatomical techniques, electron microscopy and/or electrophysiology desired. Candidates must have Ph.D. degree and satisfy immigration status for PHS training grant support. Send résumé and letters of recommendation to: **Dr. Frank Scalia, Department of Anatomy and Cell Biology, SUNY, Health Science Center at Brooklyn, 450 Clarkson Avenue, Box #5, Brooklyn, NY 11203. The State University of New York is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

POSTDOCTORAL FELLOW

Position available 1 September 1988, to study evolution and cell-to-cell transport of plant viruses. Send curriculum vitae, recent publications, transcripts, research interests, and three letters of reference to: **Ulrich Melcher, Department of Biochemistry, Oklahoma State University, Stillwater OK 74078. Telephone: 405-624-6210. An Equal Opportunity/Affirmative Action Employer.**

UNIVERSITY OF OTAGO DUNEDIN, NEW ZEALAND POSTDOCTORAL FELLOW IN MARINE SCIENCE

Applications are invited for a 2-year postdoctoral fellowship in marine science.

In making an appointment priority will be given to applicants whose research projects would take advantage of the University's redeveloped Portobello Marine Laboratory. Science departments with special interests in marine fields include botany, chemistry, geology, mathematics and statistics, microbiology, surveying, and zoology.

Applicants should have completed the requirements for the award of the degree of Doctor of Philosophy.

Salary: NZ\$35,000 per annum.

Intending applicants should write for further information, available from the undersigned, **P.O. Box 56, Dunedin, New Zealand.**

Applications quoting reference number A88/16 close with the Registrar on 31 July 1988. **D. W. Girvan, Registrar.**

POSTDOCTORAL POSITION available 1 September 1988 to participate in NIH-funded study of autoimmune disease. Research involves techniques in immunochemistry and cellular immunology. Applicant must have completed all Ph.D. requirements and have experience with T-cell clones. Send curriculum vitae, statement of experience and names and addresses of three references by 1 August 1988 to: **Dr. Marc Monestier, Center for Molecular Medicine and Immunology, 1 Bruce Street, Newark, NJ 07103.**

POSTDOCTORAL POSITION

To use non-linear dynamics (fractals, chaos) to study cell membrane ion channels. Patch-clamp experiments, new methods of analyzing single-channel data, and model simulation of channel kinetics. [Ref: Liebovitch et al. *Math. Biosci.* 84, 37 (1987); *Biophys. J.* 52, 979 (1987)]. Knowledge of mathematical numerical methods and computers essential; electrophysiology and electronics helpful. Available 1 July 1988. Send résumé and names of three references to: **Dr. Larry S. Liebovitch, Eye Research, Columbia University, 630 West 168th Street, New York, NY 10032.**

POSTDOCTORAL POSITION available to study gas exchange and root-shoot interactions in dry beans. Study involves both photosynthetic and stable isotope ratio measurements. If interested, please send a résumé and letters of reference to: **Dr. James Ehleringer, Department of Biology, University of Utah, Salt Lake City, UT 84112. Telephone: 801-581-7623.**

The University of Utah is an Equal Opportunity Employer.

POSTDOCTORAL POSITION, APPLIED SUPERCONDUCTIVITY, Brookhaven National Laboratory. Applications are invited for a postdoctoral position for a term of 2 years in the Magnet Division of the Accelerator Development Department. Position requires recent doctorate in physics or electrical engineering. The successful candidate would be involved in the design, procurement and operation of equipment for low-field superconductor ac loss measurements at variable temperatures up to 150 K, with some assistance from BNL cryogenics and electronics experts. The equipment would include the cryostat proper, with variable temperature control and a 60-Hz magnetic field source, such as a solenoid or a Morgan-Forsyth transformer. The field source would be operated in pulsed mode. Electronics for source control and for ac loss measurements, including low phase-shift, audio-frequency preamplifiers, waveform digitizer, and data logging equipment will also be procured. Applicants should send their résumé to: **Dr. Gerry Morgan, Building 902A, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, NY 11973. Equal Opportunity Employer M/F.**



**INTERNATIONAL LIVESTOCK
CENTRE FOR AFRICA
AGRICULTURAL ECONOMIST
VACANCY INT/005/88**

GENERAL

The International Livestock Centre for Africa (ILCA), with headquarters in Addis Ababa, Ethiopia, is one of the 13 international agricultural research organizations supported by the Consultative Group on International Agricultural Research (CGIAR).

The Centre has research activities in some 14 sub-Saharan African countries and has administrative offices in Kenya, Mali and Nigeria.

POSITION

Stationed at Ibadan/Nigeria, the main duties of the incumbent will be to carry out economic analysis connected with ILCA's research in the Humid Zone and in particular to work on:

- Alley farming and the economics of incorporating livestock production into this.
- Small scale milk production by cattle.
- Analysis of demand for dairy products and analysis of dairy products marketing systems.
- Access to land and its effect on the uptake of technology especially alley farming and milk production.

QUALIFICATIONS

Applicants should have MSc in Agricultural Economics with at least six years research experience and good publication record or PhD plus at least three years post PhD experience. The candidate must have some formal training or substantial experience of collaboration in research in rural sociology or anthropology. Additionally, two years experience with small holder farming in a developing country and bilinguality (English and French) will be preferred.

Salary and related benefits are paid in US \$ and will be in line with comparable international organizations. Initial salary will be determined by qualification and experience.

Applicants should send current curriculum vitae, recent salary history, names and addresses of three professional referees and photocopies of supporting documents (not returnable) before July 15, 1988 in confidence to:

**The Personnel Manager
ILCA
P.O. Box 5689
Addis Ababa
Ethiopia**

INDUSTRIAL CHEMISTS

American Maize Products Company, known for its complete line of specialty products, has openings available for Chemists in the following areas:

Analytical

This position involves improving/developing wet and instrumental methods of analysis to support production of user-specific specialty starches. Will also devise methods to predict starch performance in customer applications. B.S. with minimum 3-4 years experience or M.S. with minimum 1 year experience required.

Ag & Food

Responsibilities involve identifying the chemistry for improving existing products, developing product extensions, and new product concepts. An M.S. with minimum 3 years starch experience is required. A recent Ph.D. will be accepted.

Biochemistry/Microbiology

Involves identifying and developing new/improved enzyme producing strains, as well as optimizing conditions for producing product with the enzyme and purification methods. A Ph.D. in Biochemistry with organic and microbiology background is required, as is 0-3 years experience.

Polymers

Includes working with and developing modified and/or polymerized forms of molecular inclusion compounds to create products having desired inclusion properties and solubility. A Ph.D. in Polymer, Organic, and Physical Chemistry is required, along with minimum 5-8 years experience in chemical and functional characterizations and laboratory bench scale-up.

If you're ready to take your talents and imagination further than ever before, we invite you to find out more about American Maize. We offer an excellent salary, generous benefits and full growth. Send your resume with salary history in confidence to: **Marjorie Martin, Manager Salary & Benefits Administration, American Maize Products Company, 1100 Indianapolis Blvd., Hammond, IN 46320.** An Equal Opportunity Employer.



AMAIZO

AMAZING THINGS FROM CORN.

**DIRECTOR
ORGANIC CHEMISTRY**

Exciting career opportunity for you to lead a major research division in a rapidly expanding research-based pharmaceutical company with a world-renowned record of innovative drug discovery. Your top quality staff will provide you with rapid feedback concerning biological and potential clinical activity allowing rapid transformation of chemical compounds into innovative drugs for diseases which are currently poorly treated or untreatable. You will receive a very competitive total compensation plan, stock options, the top pension plan in the industry, a flexible benefits program, plus, plus, plus. If you are interested in being a full member of our research team and want an exciting career that makes a difference, contact us by **July 29**.

Your background must include a Ph.D., eight years experience in drug discovery research as an active, senior-level medicinal chemist, five years successful experience in managing senior-level scientists in drug discovery research, and a history of successful research accomplishment, including patents/publications that demonstrate creativity, innovation, and insight in drug discovery.

Qualified minority, female, veteran, and handicapped individuals are encouraged to apply. Interested candidates should submit curriculum vitae, citing patents held, to **Recruiting and Staffing Administrator, Pos. #60418, BURROUGHS WELLCOME CO., 3030 Cornwallis Rd., Research Triangle Park, NC 27709.** Deadline for applications is July 29, 1988. No Agencies.



Wellcome

BURROUGHS WELLCOME CO.

An Equal Opportunity Employer

EDUCATION COORDINATOR

The American Association for the Advancement of Science, a prestigious science association located in downtown Washington, D.C. has an immediate need for an Education Coordinator.

Qualified candidate will have a doctorate in science, science education, or a related discipline, and experience as a teacher, supervisor, or administrator in the elementary or secondary schools. Must understand the social and political structure of the education system in the United States. Experience in coordinating education projects that involve states, school districts, and universities and familiar with all aspects of curriculum development. Collegiality, inventiveness, energy, commitment to educational reform, and the ability to facilitate the work of others will be major considerations for the position.

For immediate consideration, please submit your resume and salary history in confidence to:

Debra Wright
American Association for the
Advancement of Science
Personnel Office
1333 H Street, N.W.
Washington, D.C. 20005

SENIOR SCIENTISTS

Enzo Biochem, Inc., a dynamic healthcare company is actively seeking highly motivated professionals to fill the following positions:

Ph.D. Chemist

Experienced senior level Synthetic Organic Chemist with expertise in nucleotide and nucleic acid chemistry to develop procedures for modifying DNA. Solid experience in oligonucleotide chemistry is required. Experience with molecular biology is preferred.

Ph.D. Biochemistry or Immunology

2-3 years experience in the development and scale-up of monoclonal antibodies. Experience with ascites and antibody purification is a must. Experience in the development of monoclonals for use in immunopathology or immunohistochemistry a definite plus. Industrial experience or experience in non-isotopic labeling of monoclonals highly desirable.

We offer excellent compensation and benefits packages. Please send CV with salary history to:

ENZO BIOCHEM, INC.

Personnel Department-SS
325 Hudson Street, New York, N.Y. 10013
Equal Opportunity Employer M/F

Visiting Immunopharmacology Scientist

A **postdoctoral** Visiting Scientist position is available within the Medical Products Department at Du Pont's Experimental Station in Wilmington, Delaware. The successful candidate will develop animal models to investigate the *in vivo* effects of cytokines on connective tissue, with particular emphasis on cartilage degradation. Candidates should have a Ph.D. in pharmacology, physiology or biochemistry with research experience in connective tissue metabolism and animal models.

At the world renowned Du Pont Company, you'll find a highly stimulating, multidisciplinary research environment in addition to an excellent salary. To be considered, please send your resume, bibliography, and references to Professional Staffing, Employee Relations Department, Room X-51197, Du Pont Company, Wilmington, DE 19898.



An Equal Opportunity Employer M/F/H/V
U.S. Citizenship Required

CHEMIST

PH.D. CLINICAL CHEMIST

Drug Safety Division Wyeth-Ayerst Pharmaceuticals

Wyeth-Ayerst Pharmaceuticals has an immediate opening for a Ph.D. level clinical chemist to supervise a modern, well equipped clinical laboratory at our drug safety testing facility in upstate New York.

The candidate for this position should have previous experience with the Hematology clinical chemistry and biochemistry of the common laboratory species and with the adaptation of human testing procedures to the same. Of equal emphasis is a strong background in the use of computers in software packages within the lab for automation of procedures and as tools for the rapid interpretation of clinical results. The successful candidate will work on a cooperative basis with PhD level Toxicologists, Pathologists and Pharmacologists providing input regarding the significance of the clinical results and developing strategies to further elucidate the possible mechanism of drug toxicity.

Our drug safety testing facility is located between the foothills of the Adirondack Mountains and the shores of Lake Champlain. The area offers the benefits of a relaxed rural lifestyle and a wide range of outdoor recreational activities while being within easy driving distance of such cultural centers as Lake Placid, Burlington, Vermont and Montreal, Canada. Wyeth-Ayerst is an equal opportunity employer offering the successful candidate an attractive benefit package and a salary commensurate with experience. Send resume in confidence to:



Gary D. Wagoner, Personnel,
WYETH-AYERST
RESEARCH INC.,
Rouses Point, New York 12979.

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

▽
POSITION AVAILABLE
DIRECTOR, DIVISION OF EXTRAMURAL ACTIVITIES
NATIONAL INSTITUTE OF MENTAL HEALTH
ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH ADMINISTRATION
PUBLIC HEALTH SERVICE
DEPARTMENT OF HEALTH AND HUMAN SERVICES

The Alcohol, Drug Abuse, and Mental Health Administration invites nominations and applications for the position of Director, Division of Extramural Activities, National Institute of Mental Health (NIMH).

This is a Senior Executive Service position in the career civil service, with an annual salary range of \$65,994 to \$73,400. Physicians may also be eligible for a Physicians' Comparability Allowance of up to \$20,000 per year. The position is located in Rockville, Maryland.

The Division of Extramural Activities provides advice to the Director, NIMH, in developing extramural programs and policies and leadership in their coordination and implementation; represents the Institute on extramural program and policy issues within the Department of Health and Human Services, Public Health Service, the Institute, as well as outside organizations; is responsible for initial scientific and technical peer review of applications for grants, cooperative agreements, and contracts; and is responsible for final review of grant and cooperative agreement applications by the National Advisory Mental Health Council and for planning and coordinating all Council activities. The Director is responsible for the program and administrative management of the Division of Extramural Activities.

Minimum qualifications requirements include a degree of Doctor of Medicine, Doctor of Osteopathy, or a bachelor's degree or higher

degree in an academic field related to the health sciences pertinent to the work of the position; and progressively responsible experience in the scientific administration of mental health research funded through grants and contracts which demonstrates a familiarity with the extramural review function. Candidates must also have experience in the management of programs; demonstrating competence to assume leadership in planning, staffing, directing, coordinating and allocating resources, and other responsibilities associated with executive leadership of a major national program.

Further information about the position and qualifications requirements may be obtained by contacting Ms. Carmen Garcia at (301) 443-5030. An SF 171 (Application for Federal Employment) accompanied by a current curriculum vitae and bibliography should be submitted to Ms. Garcia at the Division of Personnel Management, Alcohol, Drug Abuse, and Mental Health Administration, 5600 Fishers Lane, Room 15C-26, Rockville, Maryland 20857. Complete application material (including the SF 171) must be postmarked by the closing date of August 15, 1988. Resumes are not acceptable for entrance into the Senior Executive Service.

Applications from women and minority group members are especially solicited.

THE ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH ADMINISTRATION IS AN EQUAL OPPORTUNITY EMPLOYER



DIRECTOR, OCEAN ENGINEERING DIVISION

The Office of Naval Research (ONR) is seeking an outstanding individual to serve in this Civil Service position in the Senior Executive Service. Salary range is \$64,700 to \$73,400, depending on qualifications. In addition to salary, career SES appointees are eligible to compete for performance awards and bonuses.

The Director, Ocean Engineering Division is responsible for providing leadership, coordination and direction for ONR's \$16M fundamental research programs in ocean technology, coastal sciences, research facilities and remote sensing. The goal of the Division is to understand the interactions of ocean processes with man-made structures, and sensors and systems. The Division Director is the scientific administrator of ONR R&D activity in the described fields with full responsibility for staffing his/her program, establishing overall priorities and procedures, and recommending change in program objectives and policies to the Director, Ocean Sciences Directorate. The Division Director serves as the principal consultant to the Navy on developing naval applications in ocean engineering and related fields.

Candidates should possess a Ph.D. or equivalent in engineering, oceanography or physics and have significant experience in ocean engineering or a related field. Considerable experience in the administration and management of research and its application to development is also required.

Interested persons should submit a Standard Form 171, Application for Federal Employment (available at Federal Job Information Centers or from the address below) and a resume including a list of publications, to:

OFFICE OF THE CHIEF OF NAVAL RESEARCH

Civilian Personnel Division, Code 01242P, Attn: Announcement 88-45 (S)
800 North Quincy Street, Arlington, VA 22217-5000

Applications will be accepted through 19 August 1988 and must be received by that date. Applicants are requested to complete the appropriate supplemental forms. For further information and supplement forms, please call (202) 696-4705.

U.S. CITIZENSHIP REQUIRED • AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

POSTDOCTORAL POSITION in the Department of Biochemistry, Colorado State University. Available 1 August 1988. Recent Ph.D. with interest in spectroscopy of proteins and nucleic acids, with emphasis on theoretical aspects. Degree should be in physical chemistry, biochemistry or biophysics. Salary negotiable. Send application, curriculum vitae and three letters of reference to: **Dr. R. W. Woody, Department of Biochemistry, Colorado State University, Fort Collins, CO 80523. Telephone: 303-491-6214.** CSU is Equal Employment Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Service Building.

POSTDOCTORAL POSITION CLINICAL OLFACTION UNIVERSITY OF PENNSYLVANIA

Available immediately to participate in clinical psychophysical studies of olfactory perception in disease states, including Alzheimer's disease and Parkinsonism. Applicants from all areas of psychology and psychobiology are encouraged to apply. Send curriculum vitae and names of three references to: **Dr. Richard L. Doty, Smell and Taste Center, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104.** The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.

TWO POSTDOCTORAL POSITIONS to study regulation of gene expression during limb development and chondrogenesis. Studies include the use of recombinant DNA techniques to analyze molecular mechanisms by which extracellular matrix, cytoskeleton, and cyclic nucleotides regulate specific gene activity during chondrogenesis; the role of homeobox-containing genes in the regulation of pattern formation during limb development; and, the role of growth factors in the regulation of cytodifferentiation and pattern formation. Experience in recombinant DNA techniques and/or cell-matrix interactions desirable. Send curriculum vitae and names of references to: **Dr. Robert A. Koshier, Department of Anatomy, or Dr. William Upholt, Department of BioStructure and Function, University of Connecticut Health Center, Farmington, CT 06032.** An Affirmative Action/Equal Opportunity Employer M/W/H.

POSITIONS OPEN

POSTDOCTORAL POSITION IN CHEMICAL ECOLOGY. To investigate plant phenolics and ruminant diets with **A. Hagerman and C. Robbins (Ecology 68, 1060).** Strong background in plant ecology/ecological modeling and desire to learn methods such as HPLC and electrophoresis essential. Send curriculum vitae and names of three references to: **Dr. Ann E. Hagerman, Department of Chemistry, Miami University, Oxford, OH 45056,** before 29 July 1988. *Equal opportunity in education and employment M/F/H.*

POSTDOCTORAL POSITION, MOLECULAR BIOLOGY, Cardiovascular Institute, for M.D. and/or Ph.D., available immediately to study molecular biology of vascular hormone receptors. Background in molecular biology and/or biochemistry preferred. Send curriculum vitae and three letters of recommendation to: **Dr. Nelson Ruiz-Opazo, Section of Molecular Genetics, Boston University Medical Center, 80 East Concord Street, Boston, MA 02118.**

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION in x-ray crystallography and fiber diffraction of macromolecular assemblies. Diffraction techniques developed in this laboratory have determined the structure of tobacco mosaic virus at 2.9 Å resolution; the successful applicant may work either with viruses, related or unrelated to TMV, or more general applications of fiber diffraction to viruses, cytoskeletal filaments and other systems. We are particularly interested in using crystal structures of parts of larger assemblies to solve fiber diffraction problems. Experience in crystallography or any area of structural biology an advantage. Curriculum vitae and names of three references to: **Dr. Gerald Stubbs, Department of Molecular Biology, Vanderbilt University, Box 1820, Station B, Nashville, TN 37235. Telephone: 615-322-2018.**

POSTDOCTORAL RESEARCH POSITION— Studies on oxygen cytotoxicity. Salary commensurate with experience. Please send curriculum vitae and references to: **Dr. Arnold Stern, Department of Pharmacology, New York University School of Medicine, 550 First Avenue, New York, NY 10016.** *Equal Opportunity Employer M/F.*

POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATE

Postdoctoral/research associate positions available immediately to participate in research dealing with (i) Cocaine receptors in the brain and effects of addiction or (ii) Comparative toxicology of vertebrate and invertebrate neurotransmitter receptors. A Ph.D. in biochemistry, neuroscience, pharmacology or toxicology is required. Send curriculum vitae and names to: **Dr. M. E. Eldefrawi, Department of Pharmacology and Experimental Therapeutics, University of Maryland School of Medicine, 655 West Baltimore Street, Baltimore, MD 21201.** *Affirmative Action Equal Opportunity Employer.*

POSTDOCTORAL/RESEARCH ASSOCIATE, BIOCHEMIST/MOLECULAR BIOLOGIST

Position(s) available to complete the purification of Ca^{2+} -ATPase and study (its role in the) regulation of cellular Ca^{2+} sequestering. Send application to: **Dr. Naomi Kraus-Friedmann, Department of Physiology and Cell Biology, University of Texas Medical School, P.O. Box 20708, Houston, TX 77225. Telephone: 713-792-5278.**

The University of Texas Health Science Center/Medical School is an Equal Opportunity Employer. Women and minorities are encouraged to apply.

POSTDOCTORAL RESEARCH ASSOCIATE (PLANT MOLECULAR BIOLOGY) BIOTECHNOLOGY CENTER OHIO STATE UNIVERSITY

A position is available to work on the regulation of expression of nodulin genes using antisense mRNA approach in transgenic legumes and to study genes encoding trans-acting factors controlling nodulin genes expression in Professor D. P. S. Verma's laboratory. Experience in the area of recombinant DNA is essential and the knowledge of plant tissue culture is desirable. Salary commensurate with experience. Application enclosing curriculum vitae and two letters of recommendation should be sent to: **Director, Ohio State Biotechnology Center, 1060 Carmack Road, Columbus, OH 43210.**

CONJUGATE PRODUCTION SCIENTIST

The Dade Division of Fortune 75 Baxter Healthcare Corporation is relied upon by clinical laboratories worldwide for some of the most advanced diagnostic products and instrumentation available today. Our success has led to a dynamic company-wide expansion program. We now seek a well-organized Ph.D. to directly participate in the transfer of conjugation technology from our R&D department to a complex reagents manufacturing area.

Responsibilities involve utilization of protein separation processes, scale-up procedures, and process validation techniques. Training/experience in organic-, bio-, and immunochemistry is required. Direct experience in either antibody, drug, and hormone conjugate production, protein modification, EIA/FIA assay development, or enzymatic analysis is preferred. Ph.D. in Life Sciences is a must.

The Dade Division offers an outstanding professional and scientific environment as well as a competitive salary and benefits package. In addition to paying no state or local income taxes, our attractive south Florida east coast location offers a quality lifestyle to the candidate who joins our team. For consideration, please send your resume along with salary history in confidence to: **Professional Staffing, Baxter Healthcare Corporation, Dade Division, P.O. Box 140520, Coral Gables, FL 33114.** Equal Opportunity Employer.

Dade Division

Baxter

Applied bioTechnology

Staff Scientist, Protein Chemistry

Applied bioTechnology is a growing company specializing in:

- genetically engineered vaccines for the veterinary and human markets
- novel products for cancer diagnostics and therapeutics based on oncogene technology

An immediate opening exists for a highly motivated individual in our Protein Chemistry/Immunology Group. As a member of our vaccine development team, the qualified applicant will coordinate the analysis and characterization of proteins expressed by a variety of recombinant DNA techniques. This individual will also contribute to the design of purification schemes for a variety of antigens and antibodies to be used in the analysis of oncogene-encoded products and the development of cancer diagnostics. The successful candidate should have a Ph.D. in Biochemistry, with post-doctoral training. Strong organizational and communication skills required.

Please submit your resume or curriculum vitae to:

Applied bioTechnology, Inc.

**80 Rogers Street
Cambridge, MA 02142**

An Equal Opportunity Employer M/F/H/V





Public Service Commission
of Canada

Commission de la Fonction
publique du Canada

Marine Research Scientists

**Fisheries and Oceans Canada
Maurice Lamontagne Institute
Mont-Joli, Quebec**

The Maurice Lamontagne Institute is seeking to fill a number of research scientists positions in physical oceanography, chemical oceanography, marine parasitology and marine fish population modelling. The Institute, which was established in 1987, is located on the south shore of the Gulf of St. Lawrence, 300 km east of Quebec. With its modern facilities and equipment it offers excellent opportunities for research on practical and fundamental problems of the marine environment. When fully developed in 1992, the Institute will have a staff of 250. At the present it seeks candidates for positions in the following fields.

1. Physical and Chemical Sciences

Head, Division of Physical Oceanography

Head, Division of Chemical Oceanography S-88-31-7101-47JG-G35

We require senior scientists to develop and lead the physical and chemical oceanography divisions. These divisions will carry out applied and fundamental research in the water under the jurisdiction of the Quebec region of the Department, including the Gulf and Estuary of St. Lawrence, Hudson Bay, Hudson Strait, and Fox Basin.

Research Scientists in Physical Oceanography S-88-31-9999-47JG-G35

We require experienced research scientists to develop and carry out research programs on the circulation and mixing of coastal waters subject to tides, winds, and influx of fresh water, sediment-water interaction, and the modelling of these processes.

Research Scientists in Chemical Oceanography and Contaminants

Research S-88-31-7102-47JG-G35

We require research scientists with experience in organic or inorganic geochemistry, marine microbiology, and/or transport phenomena in the benthic boundary layer to develop and carry out research programs on the distribution of natural and man-made organic and inorganic contaminants and tracers, and the processes that control these distributions.

2. Biological Sciences

Head, Parasitology Section S-88-31-7094-47JG-G35

We require a senior scientist to establish a section in parasitology. You will plan, direct and control the section's activities and define its objectives. You will also be expected to develop a research program and coordinate the research activity with other laboratories.

Research Scientist, Parasitology S-88-31-7100-47JG-G35

We require a research scientist to develop and carry out applied research into parasite dynamics and ecology, and the impact of parasites on marine mammals and species of fish and invertebrates used in commercial applications.

Research Scientist, Modelling of Marine Fish Populations

S-88-31-7103-47JG-G35

We require a research scientist to develop and carry out research into analytical and statistical models of populations of marine fish, including populations of fish used for commercial purpose.

You require for all these positions graduation with a doctoral degree from a recognized university in a scientific field related to the above specialties. You must have postdoctoral experience, be able to carry out independent and original research, and have published original articles that serve to confirm your scientific reputation. The positions of Division and Section Head require in addition that you have published in top ranking scientific journals, have an established credibility within the national and international scientific communities, and have experience in managing research groups. The working language of the Institute is French and although you are not required to know French upon entry, you are expected to be able to function in French within a reasonable time. When necessary, language training will be offered. For all the above positions, a willingness to work in the field for extended periods is necessary.

We offer a salary ranging from \$30,521 to \$65,744 commensurate with your qualifications and experience.

For more information about these positions contact: Dr. Bjorn Sundby, (418) 775-6703 (Physical and Chemical Sciences) or Ms. Lynn Cleary (418) 775-6637 (Biological Sciences).

Please forward your résumé and/or application form, quoting the appropriate reference number, to:
Joan Girling (613) 996-8054
Public Service Commission Of Canada
Ottawa, Ontario K1A 0M7

Closing date: August 30, 1988

Personal information you provide is protected under the Privacy Act. It will be held in Personal Information Bank PSC/P-PU-040, Personnel Selection Files.

Vous pouvez obtenir ces renseignements en français en communiquant avec la personne susmentionnée.

The Public Service of Canada is
an equal opportunity employer

Canada



We are looking for Geneticists and Molecular Biologists for our expanding microbial genetics and molecular biology program at the new Nestlé Research Centre near Lausanne, Switzerland (on the lake of Geneva) and are offering

POSTDOCTORAL FELLOWSHIPS IN MOLECULAR BIOLOGY

For a period of two to three years:

Applicants should hold a PhD in biochemistry, genetics or molecular biology. The persons appointed will conduct basic research in small, competitive research groups. Publication of basic research results is encouraged.

LACTIC ACID BACTERIA Basic research will be conducted in the following areas:

- gene transfer
- gene expression
- vector development

YEAST The chosen scientists will carry out basic research in the areas of:

- gene expression
- secretion and targeting
- vector development

Please send your Curriculum Vitae and three names for reference purposes to **Mrs. M. Germanier Audrin, Personnel Services, NESTEC LTD., P.O. Box 353, CH-1800 VEVEY, Switzerland.**

CANCER GENETICIST

METPATH, a leader in the clinical laboratory field is currently seeking a CANCER GENETICIST.

The qualified candidate will be board certified or board eligible. Clinical Cytogeneticist with experience in molecular techniques of cancer genetics is sought to head Cancer Genetics Section, and participate in the activities of a large Cytogenetics Reference laboratory. M.D. with primary training in Hematology / Oncology preferred. Ph.D. will be considered.

We offer excellent benefits, salary commensurate with experience. To express interest, please forward resume to: Mr. Harry Thompson, Human Resources Specialist, METPATH, One Malcolm Avenue, Teterboro, N.J. 07608. An Equal Opportunity Employer M / F / H / V.

MetPath



a **CORNING**
Clinical Laboratory

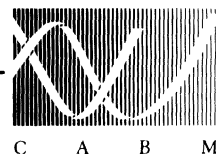
NIH STAFF FELLOWSHIP OR NIH VISITING FELLOWSHIP MOLECULAR BIOLOGY/GENE TRANSFER

The Developmental and Metabolic Neurology Branch, National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Public Health Service, invites applications for NIH Staff Fellowship or NIH Visiting Fellowship position. This postdoctoral position is available to study a) regulation of genes following transfer into cultured cells and whole organisms using retroviral vectors or b) gene targeting by homologous recombination in embryonic stem cells. Experience in one of the following areas is highly desirable: eukaryotic molecular biology, herpetology or mouse embryology. For the NIH Staff Fellowship Program, candidates must be U.S. citizens or resident aliens and must either have been awarded their doctoral degree in biology or a related science, or have been certified by a university as meeting all of the requirements leading to such a doctorate. The initial appointment is for two years with additional extensions up to five years possible. For the NIH Visiting Fellow program, candidates may be resident or nonresident aliens, and must have a doctoral degree, or its equivalent, in a health science field whose relevant post-graduate experience does not exceed 3 years of experience at the time of their entrance on duty. The original appointment is for one year with renewals up to a maximum of two additional years possible. The starting salary is commensurate with experience and is at least \$20,000 per year but more can be offered to experienced individuals.

The position is located in Bethesda, Maryland. For position information and qualification requirements, candidates may call Mrs. Christine Steyer, Personnel Management Specialist, NINCDS, on (301) 496-6334. Interested candidates should send a curriculum vitae, a brief statement of research interest and the names of three (3) references to:

Dr. Stefan Karlsson
DMNB, DIR, NINCDS
National Institutes of Health
9000 Rockville Pike
Bldg. 10, Rm. 3D04
Bethesda, MD 20892
(301) 496-8236

NIH IS AN EQUAL OPPORTUNITY EMPLOYER



CENTER FOR ADVANCED BIOTECHNOLOGY AND MEDICINE

POSTDOCTORAL POSITION IN STRUCTURE/FUNCTION STUDIES OF VIRUSES AND VIRAL PROTEINS

X-RAY CRYSTALLOGRAPHY/ MOLECULAR BIOLOGY/ MOLECULAR MODELING

Projects include structural studies of retroviral reverse transcriptases, human rhinoviruses, and other viral and cellular products; molecular surgery of viral surfaces using genetic engineering techniques; rational drug design targeting viral polymerases, receptor recognition, viral assembly and disassembly. State-of-the-art facilities available for crystallography, computer graphics and molecular modeling, and molecular and cellular biology. Send CV and arrange to have three letters of reference sent to:



Edward Arnold
CABM
675 Hoes Lane
Piscataway, NJ 08854.
Phone: (201) 932-5182.
Bitnet: arnold @ biovax.
Affirmative Action/
Equal Opportunity Employer

Request for Applications

OPPORTUNITIES IN CYSTIC FIBROSIS RESEARCH

CYSTIC FIBROSIS AND RELATED AREAS

Research Grants Program

The Cystic Fibrosis Foundation announces competitive research awards for studies related to cystic fibrosis (CF):

RESEARCH GRANTS AND NEW INVESTIGATOR GRANTS

Application Deadline: September 1 Awards are broadly oriented to support pilot and feasibility type studies for developing and initially testing new hypotheses and/or new methods. Support of up to \$30,000 in annual direct costs for two years may be requested.

RESEARCH SCHOLAR AWARDS

Application Deadline: September 1, 1988, January 2, 1989 Research Career Development type award to encourage a sustained commitment to CF from scientists engaged in outstanding independent research career. Support of up to \$100,000 per year for three years may be requested.

RESEARCH FELLOWSHIPS

Application Deadline: September 1 Awards for postdoctoral training in basic or clinical research. Stipends are available for \$30,000 (1st year), \$31,000 (2nd year) and \$33,000 (optional 3rd year).

CLINICAL RESEARCH GRANTS

Application Deadline: October 1 To support clinical research focusing on the pathophysiology, diagnosis and/or therapeutic management of CF. Funding request and duration of the award should reflect the nature of the study.

HARRY SHWACHMAN CLINICAL INVESTIGATOR AWARD

Application Deadline: January 2 Special award for promising physicians entering academic appointment with commitment to establishing career in research related to CF. Total of \$60,000 in annual direct costs, for three years may be requested.

REGULATION OF ION TRANSPORT IN EPITHELIAL CELLS

Special Request For Proposals

The Cystic Fibrosis Foundation invites investigator-initiated research grant applications to define and characterize the biochemical and molecular aspects of post-receptor regulatory mechanisms involved in epithelial ion transport related to cystic fibrosis (CF).

This special request is intended to encourage innovative, meritorious studies focusing on areas including, but not limited to:

- Mechanisms involved in phosphorylation/dephosphorylation of ion channels.
- Molecular and biochemical identification of ion transport proteins and associated regulatory elements.
- Genetic manipulation of transport models to provide better understanding of ion transport and its regulation.
- Identification and definition of second messenger pathways for regulation of ion transport.

Applications must demonstrate potential relevance to cystic fibrosis and the defect in CF epithelial cells.

Awards will be made as grants-in-aid. Applicants may request up to \$100,000 in total annual costs for up to two years.

Interested individuals are encouraged to contact the Foundation to discuss the potential relevance of their work. The deadline for submission of applications is September 1, 1988.

For further information contact Robert J. Beall, Ph.D., Executive Vice President for Medical Affairs:



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

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE positions available immediately in the area of regulation and mechanism of gene transcription. Current projects involve structural and functional studies of eukaryotic transcription factors, and mechanistic studies of RNA polymerase reactions. We are seeking two individuals with experience in molecular biology or physical biochemistry. Send curriculum vitae and three letters of references to: **Dr. Cheng-Wen Wu or Dr. Thomas Daly, Department of Pharmacology, SUNY Stony Brook, Stony Brook, NY 11794.** *SUNY Stony Brook is an Affirmative Action/Equal Opportunity Employer and Employer. AK #172.*

POSTDOCTORAL RESEARCH POSITIONS available immediately in the Division of Medical Oncology of a major New York medical center. Molecular biologists and biochemists with strong background in RNA and DNA technology interested in studying the mechanisms of tumor cell differentiation are invited to send their curriculum vitae with the names of three references to: **Dr. Samuel Waxman, Box 1178, The Mount Sinai Medical Center, One Gustave L. Levy Place, New York, NY 10029-6574.** *An Equal Opportunity Employer.*

POSTGRADUATE RESEARCH BIOLOGIST position available in Fall 1988 to study the targeting of peroxisomal proteins to peroxisomes in vivo and in vitro. Candidate must have Ph.D., a strong background in molecular or cell biology and biochemistry. Support available for 2 years. Candidate will be expected to help with some teaching. Salary commensurate with experience and based upon published University of California pay scales. Please send curriculum vitae and names of three references by 15 August 1988 to: **Dr. S. Subramani, Department of Biology, B-022, University of California, San Diego, La Jolla, CA 92093.** *Affirmative Action/Equal Opportunity Employer.*

RESEARCH ASSOCIATE: To conduct independent research in the role of zinc and other metals in chromatin structure and composition, with emphasis on the control of gene expression in eukaryotes. The work involves isolation and characterization, using zinc-free condition, of nuclei, chromatin, and its constituents, specifically chromosomal metalloproteins and transcription factors; purification of mRNA and development of a cDNA library, culture techniques of mammalian and non-mammalian cells; metal ligand exchange methods; flameless atomic absorption spectroscopy; and spectroscopic methods for determination of the structure of metal binding sites. Requirements include Ph.D. in biochemistry and 5 to 7 years of related research experience. Salary: \$20,000 to \$25,000 per year. Send résumés to: **CBBSM, Harvard Medical School, 250 Longwood Avenue, Boston, MA 02115, Attention: Charles Alongi.**

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

ARS is seeking an innovative scientist for a postdoctoral research associate appointment in plant protein research at the Northern Regional Research Center, Peoria, IL. The person selected will conduct research on vital wheat gluten to better explain how processing affects protein composition, conformation, and interactions. Information obtained will help optimize functionality and quality of vital wheat gluten. Professional knowledge of protein isolation and characterization and of instrumental analysis procedures is essential; experience with cereal proteins is desirable. The position will be a research associate with initial appointment of 2 years. A recent Ph.D. in chemistry, biochemistry, or food science is required. Salary: \$27,716 (GS-11). The Northern Regional Research Center is a well-equipped, major research facility with more than 350 scientists and staff. For additional information, contact: **Jerold A. Bietz, USDA/ARS/NRRC, 1815 North University Street, Peoria, IL 61604.** Applicants should send curriculum vitae and names and addresses of three references to: **Helen Sweeney, Personnel Assistant,** at the same address (telephone: 309-685-4011). Applications in response to this ad should be marked 8N027.

*USDA is an Equal Opportunity Employer.
Women and minorities are encouraged to apply.*

POSITIONS OPEN

RESEARCH ASSISTANT PROFESSOR. Collaborate with NIH-funded studies of humoral factor(s) affecting cell ion transport and growth in hypertension [see *AJP* 251, H984 (1986); *Circ. Res.* 62, 1001 (1988)]. Applicant should have Ph.D. in biochemistry, pharmacology, or cell biology with postdoctoral training. Experience with cell culture and with chromatographic procedures, including HPLC, necessary. Beginning salary up to \$36,000. Send curriculum vitae to: **H. W. Overbeck, M.D., Ph.D., Departments of Medicine and Physiology, University of Alabama at Birmingham, Birmingham, AL 35294.** *Equal Employment Opportunity/Affirmative Action.*

RESEARCH ASSOCIATE: Lipogen, Inc. is a dynamic biotechnology company engaged in the development of novel immunodiagnostic assays for clinical use. The company is located in the West Knoxville/Oak Ridge Technology Corridor in close proximity to the Smokey Mountains. We currently have openings for research associates in: (i) molecular biology/microbiology; (ii) bacterial fermentation; (iii) mammalian cell culture; and (iv) immunoassay development. These positions require a B.A./B.S. degree with appropriate experience or an M.S. degree.

Please reply in confidence to: **Dr. L. A. Stringfellow, Lipogen, Inc., 10515 Research Drive, Knoxville, TN 37932.** Telephone: 615-675-9550.

RESEARCH ASSOCIATE/ POSTDOCTORAL FELLOW MOLECULAR GENETICS

Position available immediately in reverse genetics project to isolate and characterize genes involved in the brain developmental defect lissencephaly (smooth brain) associated with the Miller-Dieker syndrome (microdeletion of human chromosome 17). Significant experience in molecular genetics techniques is required. Send resume to: **Dr. David H. Ledbetter, Institute for Molecular Genetics, Baylor College of Medicine, Houston, TX 77030.**

RESEARCH INSTRUCTOR, M.D. or Ph.D., to study cellular interactions in the induction of mucosal immune responses to microbial and environmental antigens. Experience in long-term tissue culture, preparation of mononuclear cell subpopulations, ELISA, ELISPOT, immunofluorescence microscopy, purification of antibodies, statistical analysis of immune responses and a working knowledge of mucosal immunology required. Qualified persons contact: **Dr. Jiri Mestecky, University of Alabama at Birmingham, Department of Microbiology, University Station, Birmingham, AL 35294,** before 27 August 1988.



California Institute of Biological Research CALIFORNIA INSTITUTE OF BIOLOGICAL RESEARCH RESEARCH PROGRAM DIRECTORS

California Institute of Biological Research (CIBR), a non-profit institute, has recently been established with financial support from Stratagene in La Jolla, CA. The institute is in a beautiful, coastal location in close proximity of the Salk Institute, Research Institute of Scripps Clinic, Medical Biology Institute, La Jolla Cancer Research Center, and the University of California, San Diego. CIBR will consist of laboratories with research interests in eukaryotic gene regulation, oncogenes, cellular and molecular transformation, control of immune responses, molecular biology of differentiation, and mammalian development. CIBR Research Program Directors should demonstrate the ability to obtain funding from extramural granting agencies. Research Program Directors also will be aided by significant core supplementation and may serve as consultants to Stratagene with the opportunity to engage in collaborative projects. Investigators with appropriate research interests are encouraged to apply.

Send curriculum vitae to: **Personnel, California Institute of Biological Research, 11099 North Torrey Pines Road, La Jolla, CA 92037.**

POSITIONS OPEN

RESEARCH ASSOCIATE

Ph.D. or M.D. degree with relevant experience. Structure and biosynthesis of a novel cytoskeletal protein expressed in a tissue specific and regulated manner. Prior experience in molecular biology is desirable. Send curriculum vitae to: **Dr. Mark H. Ginsberg, Department of Immunology, Research Institute of Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, CA 92037.**

RESEARCH ASSOCIATE/POSTDOCTORAL. For person with fluid dynamics background, to join investigation of chemistry and physics of the ocean surface. The successful candidate will be expected to develop sea-going techniques to measure and describe fine-scale fluid motions in and under slicked and unslicked surfaces. The position will involve interaction with investigations of oceanic surface chemistry and of upper ocean microstructure. This is a 2-year fixed term appointment (possible renewal for a third year). Qualifications include Ph.D. in physics, physical oceanography, or engineering; strong background in fluid dynamics; interest in interfacial processes; ability to work at sea. \$27,000 to \$35,000 depending on qualifications. Résumé and names, addresses and telephone numbers of three references must be received before 29 July 1988. Send to: **Dean D. R. Caldwell, College of Oceanography, Oregon State University, Oceanography Admin Building 104, Corvallis, OR 97331-5503.**

Oregon State University, an Equal Opportunity/Affirmative Action Employer, complies with section 504, Rehabilitation Act of 1973 and has a policy of being responsive to the needs of dual-career couples.

DEPARTMENT OF AGRICULTURE (USDA) AGRICULTURAL RESEARCH SERVICE (ARS)

RESEARCH PLANT PATHOLOGIST, Cereal and Soybean Improvement Research, Ames, Iowa.

ARS is seeking a research pathologist to conduct fundamental pathology research on oat rust pathogens and their hosts, to increase knowledge at the genetic and molecular levels of the host/pathogen interaction, and to develop strategies to control the diseases.

Candidates must have knowledge of (i) plant molecular pathology, (ii) cereal and fungal genetics, and (iii) effective gene transfer techniques. Ph.D. is desirable. *Must be U.S. citizen.* Salary is commensurate with experience (\$27,716 to \$51,354). For information on the research program and/or position, contact: **Dr. Arnel R. Hellauer on 515-294-3052.** For information on application procedures/forms contact: **Janie E. Carr on 301-344-4569.** Applications in response to this advertisement should be marked 8N023.

Applications must be received by 15 July 1988. Mailing address:

**USDA, Agricultural Research Service
Personnel Operations Branch
Northern Section, MWA, Building 419
BARC-East
Beltsville, MD 20705
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STAFF SCIENTIST, EXPERIMENTAL NUCLEAR PHYSICS: Participate in the research program in experimental nuclear physics at the Continuous Electron Beam Accelerator Facility. Take part in the design and construction of the high resolution magnetic spectrometers in End Station A. Lead design efforts for a focal plane polarimeter for the proton spectrometer. Coordinate user activities for the experiments to be performed with the high resolution spectrometers. This work proceeds at a pace and with turn-around time driven by an ongoing construction project. Forty hours per week, 8 a.m.-5 p.m., \$40,000 per year. Ph.D. in experimental nuclear physics and 5 years of experience in job or 5 years of experience in conducting research in experimental nuclear physics. Prior experience must include the use of high resolution magnetic spectrometers and charged particle detection systems; demonstrated expertise in proton focal plane polarimetry techs. Ability to utilize small and large scale computers (VAX, CRAY), knowledge of 3-dimension magnetostatic computer codes such as TOSCA; publications in experimental nuclear physics. Mail or hand carry résumé with copy of advertisement attached to: **M. J. Hotchkiss, VEC, 5145 East Virginia Beach Boulevard, Norfolk, VA 23502.** J.O. #VA7060541.

POSITIONS OPEN

STAFF POSITIONS

Molecular Vaccines, Inc., a dynamic biotechnology company located in the suburbs of Washington D.C., is committed to developing novel subunit vaccines and immunotherapeutics for AIDS and other infectious diseases. We have senior research scientist, research scientist, and research associate level positions available in protein biochemistry and purification, peptide chemistry, virology, and immunology. Ideal candidates should have strong research experience and publication record. Please submit your curriculum vitae and statement of research interests to: **Human Resources, Molecular Vaccines, Inc., 19 Firstfield Road, Gaithersburg, MD 20878.**

THE BIOMEMBRANE INSTITUTE AND UNIVERSITY OF WASHINGTON

STAFF SCIENTIST POSITION, POSTDOCTORAL POSITION—MOLECULAR BIOLOGY SECTION are to be filled immediately. Individuals chosen will participate in an ongoing research program aimed at understanding the expression and regulation of proteins involved in glycosylation. Applicants should have a Ph.D. degree or equivalent with extensive experience in molecular biology techniques, including gene cloning using both nucleotide probes and antibodies, DNA sequence analysis, transfection, and microinjection. Salaries are competitive and commensurate with experience. There is an excellent benefits package. Interested applicants should send a brief statement of professional interests, curriculum vitae, and names of three references to: **Personnel, The Biomembrane Institute, 201 Elliott Avenue, West Seattle, WA 98119.**

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 Physiology in the Medical School wishes to fill a **TENURE-TRACK POSITION**, the level to depend on experience and research support. Opportunity also exists for an appointment at Dalton Research Center. Focus is on membrane biophysics, cellular and molecular biology which can interact with programs in cardiovascular physiology and pathophysiology (hypertension, angiogenesis). Department recently recruited four faculty who are investigating membrane channel and transport regulation. A campus program in molecular biology is established which includes core facilities. The successful applicant shall establish an independent laboratory, either in the Department, the Dalton Research Center or both. Other duties include teaching in medical or graduate physiology courses. Salary and start-up funds are competitive. Send curriculum vitae and reference list to: **Dr. Allan W. Jones, Department of Physiology, University of Missouri, MA415 Medical Sciences, Columbia, MO 65212.** Must be received by 31 August 1988. *An Equal Opportunity Employer with special initiatives for women and minorities.*



NATIONAL UNIVERSITY OF SINGAPORE DEPARTMENT OF BOTANY

Applications are invited for teaching appointments in the Department of Botany.

Candidates should have a PhD degree and who are trained in ONE or more of the following areas in *plant sciences*: molecular biology, biotechnology, recombinant DNA-technology, gene transfer systems, molecular genetics, biochemistry, developmental botany, morphogenesis and tropical ecology.

Gross annual emoluments range as follows:

Lecturer	S\$43,850–57,350
Senior Lecturer	S\$51,950–91,070
Associate Professor	S\$79,780–109,880
(US\$1.00 = S\$2.01 approximately)	

The commencing salary will depend on the candidate's qualifications, experience and the level of appointment offered.

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 or 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. Staff members may undertake consultation work, subject to the approval of the University, and retain consultation fees up to a maximum of 60% of their gross annual emoluments in a calendar year.

The Department of Botany is a department in the Faculty of Science. There are 8 faculties in the National University of Singapore with a current student enrollment of some 14,000. The Department is well-equipped with a wide range of facilities to enhance the teaching and research activities of staff members. The University is linked to BITNET, an international network that interconnects almost 500 mainframe computers at 200 institutions of higher learning and research centres around the world.

Application forms and further information on terms and conditions of service may be obtained from:

**The Director
Personnel Department
National University of Singapore
10 Kent Ridge Crescent
Singapore 0511**

**The Director
North America Office
National University of Singapore
780 Third Avenue, Suite 2403
New York, N.Y. 10017, U.S.A.
Tel: (212) 751-0331**

Enquiries may also be sent through BITNET to: **PERSDEPT @ NUSVM**

Research Assistants Pharmacological Sciences

Genentech, Inc., a leader in the field of biotechnology, has openings in our Biomolecular Pharmacology group for Research Assistants with an interest and experience in neurology.

One position involves the study of the pharmacology of receptors, enzymes, and neurotransmitters in the central and peripheral nervous system. Requirements include a relevant scientific BS or MS, with at least two years' experience in immunology or virology as well as experience with radioligand binding, autoradiography, and enzyme biochemistry.

An individual is also sought to study the neuronal regeneration following injury. This opportunity requires a relevant BS or MS and at least two years' experience in neuronal tissue/cell culture preparation and basic biochemical knowledge. Experience

in techniques such as ELISA, RIA, HPLC, column chromatography and gel electrophoresis is also required.

Genentech, Inc. offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. For the first position, please send your resume to Carol T.A. Deasy, Human Resources Department, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. For the second position, please send your resume to Eric C.B. Mankuta, Human Resources Department, at the same address. An equal opportunity employer.

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POSITIONS OPEN

STAFF SCIENTIST III—SRF TECHNOLOGY: Provide advice on the design of the accelerator; perform research and development to optimize cavity peripheral components; transfer superconducting radio frequency (SRF) tech to industry; supervise testing of cavities and maintain quality assurance; assist in the design and implementation of on-site chemical processing and clean assembly equipment; identify and solve unanticipated problems; supervise technical personnel within the SRF division and devise, design and conduct experiments to understand and suppress field emission, defects and residual resistance. Forty hours per week, 8 a.m. to 5 p.m., \$59,800 per year. Ph.D. in physics and 5 years of experience in job or 5 years of experience conducting research in SRF technology required. Prior experience must include developing superconducting cavities for recirculating electron linear accelerator, field emission, DC and RF breakdown phenomena. Must be totally abreast of the state of the art RF superconductivity. Publications in SRF technology. Supervise two persons. Mail or hand carry résumé with copy of ad attached to: **M. J. Hotchkiss, VEC, 5145 East Virginia Beach Boulevard, Norfolk, VA 23502. J.O. #VA7060946.**

LIPOGEN, INC.

A rapidly growing biotechnology firm located in Knoxville, Tennessee, is looking for a Ph.D. **SYNTHETIC CHEMIST/ORGANIC CHEMIST** to join the research and development of diagnostic and therapeutic products based on molecular cloning and liposome technologies. We desire a person with 3 to 5 years experience in industrial/biotechnology environment in the areas of lipid-drug conjugation, lipid-protein conjugation, as well as synthesis of a variety of lipophilic compounds. In addition, experience with a variety of immunoglobulin (IgG) derivatization chemistries is strongly desired.

Salary dependent on qualification. Reply in confidence to: **Dr. Leaf Huang, Lipogen, Inc., 10515 Research Drive, Knoxville, TN 37932.**

FELLOWSHIPS

UNIVERSITY OF CALIFORNIA SAN FRANCISCO POSTDOCTORAL FELLOWSHIPS IN BASIC MECHANISMS OF ENVIRONMENTAL MUTAGENESIS AND CARCINOGENESIS

Fellowships are available for research on the molecular, cellular, genetic, and developmental aspects of mammalian cells. The faculty includes **Michael J. Banda** (wound repair, proteinases and proteinase inhibitors), **James E. Cleaver** (DNA repair genes), **William F. Morgan** (sister chromatid exchange), **J. P. Murnane** (DNA recombination), **Robert B. Painter** (DNA replication and repair), **Roger Pedersen** (early mammalian development), **Matthias R. Wabl** (molecular immunology), **Zena Werb** (macrophage phenotyping, metalloproteinase genes, growth factors, and extracellular remodeling in development), and **Sheldon Wolff** (radiation genetics, cytogenetics).

Stipends are funded through a National Research Service training program. Appointments can begin immediately. The requirements are U.S. citizenship or permanent residency and a Ph.D. degree or equivalent. Send résumé, graduate transcript, statement of research interests, and three letters of recommendation to: **Dr. Zena Werb, Program Director, Laboratory of Radiobiology and Environmental Health, University of California, San Francisco, CA 94143-0750. An Equal Opportunity/Affirmative Action Employer.**

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

FELLOWSHIPS

QUEEN'S UNIVERSITY DEPARTMENT OF BIOLOGY NSERC UNIVERSITY RESEARCH FELLOWSHIP

The department of biology wishes to nominate a strong candidate for an NSERC University Research Fellowship beginning in 1989 in the area of fish biology. This is a 5-year research position (subject to review in the third year) with limited teaching duties. Candidates should have demonstrated significant research capability beyond the Ph.D. NSERC gives preference to fairly recent Ph.D.'s. Candidates must be Canadian citizens or permanent residents by 1 November 1988. Candidates of either sex are equally encouraged to apply. Candidates should send curriculum vitae and a brief research proposal to: **Professor D. T. Dennis, Head** (address below) and arrange to have three letters of reference sent. Candidates should contact the department by 1 September 1988.

**Dr. D. T. Dennis, Head
Department of Biology
Queen's University
Kingston, Ontario
K7L 3N6**

TRAINING PROGRAM

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES POSTDOCTORAL TRAINING PROGRAM IN DRUG AND ALCOHOL ABUSE

The University of Arkansas for Medical Sciences anticipates filling several postdoctoral positions in the drug and alcohol abuse training program. Fellows entering the program will receive a starting salary of \$23,000 per year with a \$1,000 annual increase. These positions will be available as of 1 July 1988. The current faculty and their research interests are: **T. Badger** (ethanol and opiate effects on neuroendocrine function and tissue growth and development), **D. Davies** (ethanol effects on neuronal tissue repair), **K. Light** (developmental aspects of ethanol administration), **C. Lumpkin** (ethanol effects on tissue regeneration and growth), **D. E. McMillan** (behavioral pharmacology of drugs of abuse, drug discrimination, drug interactions), **R. E. Mrak** (ethanol effects on cholinergic transmission), **S. M. Owens** (immunological models of drug receptors, experimental therapeutics, pharmacokinetics), **G. R. Wenger** (behavioral pharmacology of drugs of abuse, memory and learning, drug interactions), **W. D. Wessinger** (behavioral pharmacology of drugs of abuse, receptor binding, drug withdrawal). In addition, collaborative arrangements with personnel from the neighboring National Center for Toxicological Research (developmental effects, chronic effects of drugs of abuse) can be arranged.

Candidates should address initial inquiries to: **Dr. Galen R. Wenger, Department of Pharmacology and Toxicology/Mail Slot 611, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, AR 72205.**

MARKETPLACE

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MARKETPLACE

WANTED SCIENTIFIC, TECHNICAL AND MEDICAL JOURNALS

Frost & Sullivan, a long-established international publishing company, seeks to acquire large and small paid, subscriber-based scientific, technical and medical journals (STM) to add to its existing program. We are also interested in purchasing STM publishing companies of all sizes. Please reply in confidence to: **Philip van Tongeren, Vice President, Periodicals, Frost & Sullivan, 106 Fulton St., New York, NY 10038-2786. Tel.: (212) 233-1080.**

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Circle No. 66 on Readers' Service Card

IMMUNEX CORPORATION, a Seattle based biotechnology company on the forefront of research and development in immune regulation, has a number of positions open as a result of an expansion in our research activities. We are recruiting:

STAFF SCIENTISTS OR POSTDOCTORAL FELLOWS

with experience in the following areas:

Cytokine Biology

A scientist is needed to develop small animal models of human diseases. Particular emphasis will be placed on in vivo assessment of recombinant cytokines in models of hematopoiesis, autoimmunity and immune deficiency.

Biochemistry/Process Development

A postdoctoral fellow is sought to work on the purification, characterization, and renaturation of recombinant proteins expressed in microbial and mammalian cell hosts.

Proteolytic Enzymes

A scientist is needed to purify and characterize therapeutically important mammalian and microbial proteases in conjunction with a team providing recombinant proteases and protein engineering for structure and function studies. Preference will be given to candidates with experience in the design of protease substrates and inhibitors coupled with a strong background in determining enzyme kinetic and thermodynamic constants.

Protease/Cytokine Biomimetics: Organic Chemistry

An organic chemist is needed to participate in a multidisciplinary approach to rational drug design. The successful candidate will synthesize protease substrates and inhibitors, as well as, small organic biomimetics of cytokines and their receptors. Preference

will be given to candidates with experience in designing and synthesizing protease chromogenic substrates and/or small organic protease inhibitors.

Cytokine Structure/Function: Crystallography

A protein crystallographer is needed to interact with a multidisciplinary team of scientists to explore cytokine structure and function using high resolution x-ray diffraction analysis coupled with modern genetic engineering techniques and molecular modeling. Previous experience in crystallizing proteins and using molecular modeling software is required.

Cell Biology

A researcher is needed with experience in cell biology, particularly in the area of inflammation, to develop assays, determine biological relevance, and assist in the cloning/expression of therapeutically important mammalian and microbial proteases. The successful applicant must hold a PhD in Immunology or a related field.

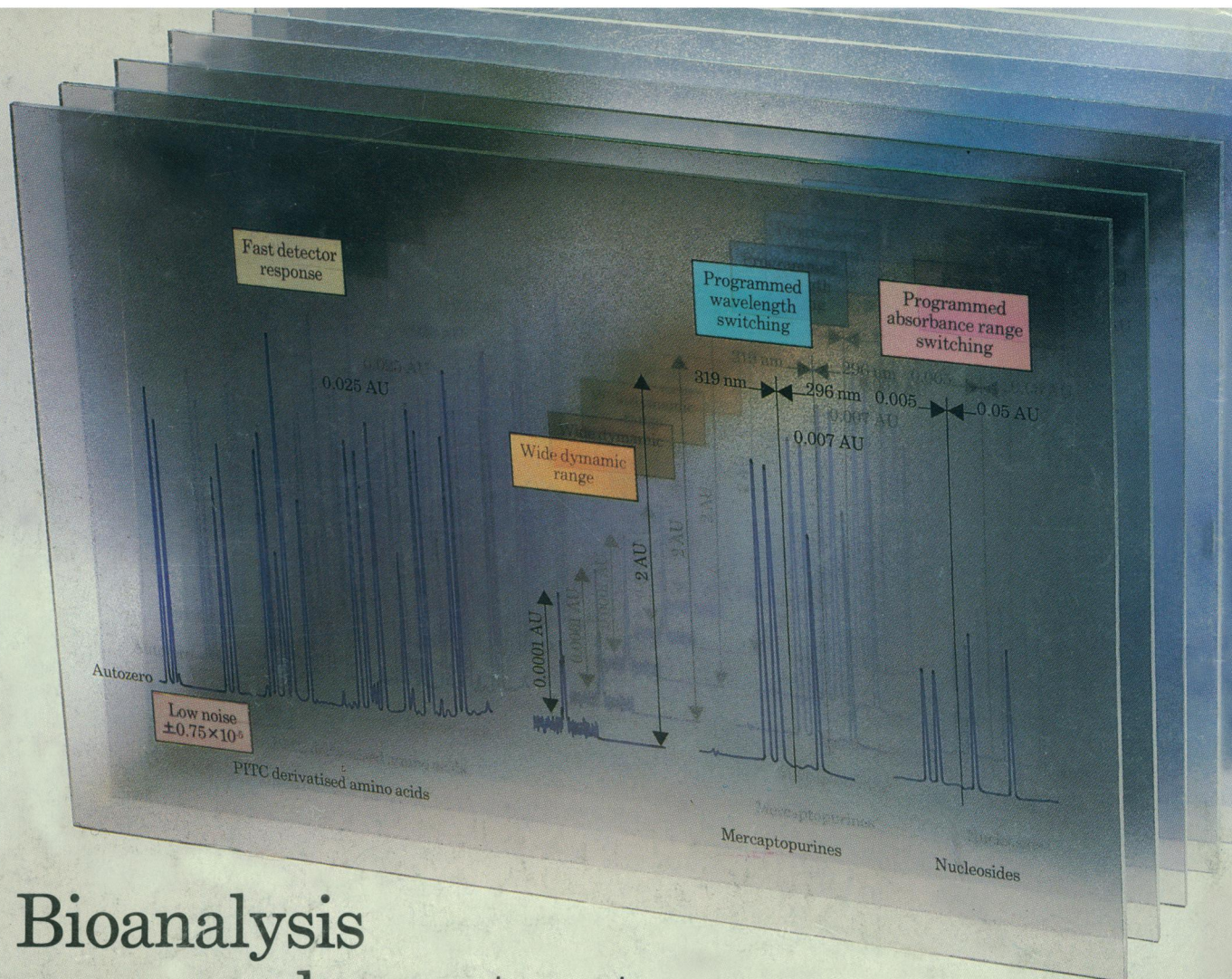
Molecular Biology

A scientist is sought with interest and expertise in one or more of the following areas: design and use of viral expression vectors in mammalian cells, screening cDNA libraries by direct expression, mechanisms of control of mammalian gene expression, gene transfer and expression in hematopoietic cells, production of recombinant proteins in mammalian cells.

Staff Scientist candidates should hold a PhD or MD degree and possess significant postdoctoral experience demonstrating independent research skill and creativity and will have demonstrated an ability to work in a collaborative environment. Successful candidates for postdoctoral fellowships should have completed a PhD or MD degree and no more than two years' postdoctoral training.

Immunex Corporation offers excellent opportunity for career development as well as competitive salaries and an excellent benefits package. For consideration, please submit C.V., names of three references, and a list of publications to: **Immunex Corporation, Human Resources Director, 51 University Street, Seattle, WA 98101.** Immunex is an equal opportunity employer m/f/h.

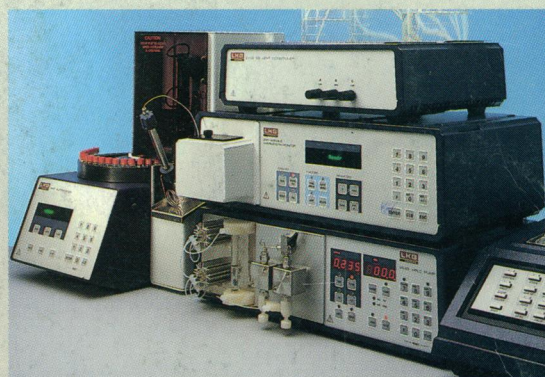
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Bioanalysis you can always trust. Always.

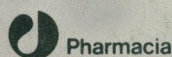
You're working with biomolecules and biomaterials. From proteins, peptides and amino acids, to pharmaceutical compounds in body fluids. You're probably using a standard HPLC system for your analytical separations. Yet you still want more reliable results, better use of your time and higher performance all-round. That's why we've designed HPLC System One. To give you better performance. System One includes the ability to handle small amounts of sample, reproducible gradient formation, higher separation efficiency and higher detector sensitivity. Based on the newest instrumentation and the very latest technology, System One has been engineered to meet the demanding requirements in bioanalytical HPLC.

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