

by the complexity of this figure, which I will not even attempt to draw."

Since Poincaré's time much further effort has been devoted to understanding the nature of homoclinic orbits, the mechanisms by which they arise, and their effect on the dynamics of the system. Many of these results are reviewed in S. Newhouse's lectures on conservative systems.

A generalization of the notion of homoclinic orbits leads one to the study of hyperbolic sets, the theory of which is presented in O. Lanford's lectures. These are sets on which some transformation acts in such a way that certain directions in the set get "stretched" while others get "squashed." This stretching leads to a sensitive dependence on initial conditions, since two points separated by an arbitrarily small amount (in particular, by an amount too small to be experimentally discerned) can rapidly become separated by macroscopic amounts.

Though the desire to understand classical mechanics and its relationship to statistical mechanics gave rise to much of the early research in dynamical systems, more recent research has often been motivated by the hope that this sensitive dependence on initial conditions can explain the development of turbulence in fluid dynamics and related systems. The systems in which chaos can be studied theoretically in great detail are generally simplified models with few degrees of freedom, whereas real systems displaying chaotic behavior are usually far more complicated and contain infinitely many degrees of freedom. Nonetheless, it is believed (and has been experimentally verified in a few cases) that the simple models can be used to give qualitative, and in some instances quantitative, predictions about real systems. These beliefs are based on the universality theories that arise when one applies to dynamical systems the renormalization group methods developed during the 1970's to study critical phenomena in statistical mechanics. Applications of the renormalization group ideas are explored in the lectures of both L. Kadanoff and G. Gallavotti. Gallavotti emphasizes the relationship between the renormalization group and the work of Kolmogorov, Arnold, and Moser on Hamiltonian systems; Kadanoff focuses on dissipative systems with few degrees of freedom. The lectures of P. Collet and J.-P. Eckmann also focus on the dynamics of very simple systems, namely, one-dimensional maps.

The final chapter of the book contains the lectures of E. Trubowitz on completely integrable Hamiltonian systems. This is a special class of systems whose motions are extremely regular and which seem to arise in a number of important and not obviously related situations.

Though the emphasis of the lectures is on rigorous results, the exposition is generally good, and most of the material should be accessible to a person with a solid background in the theory of differential equations and some knowledge of classical mechanics. Thus this volume can serve as an entry into an exciting field of research.

C. EUGENE WAYNE

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Books Received

The Atlantic Alcidae. The Evolution, Distribution and Biology of the Auks Inhabiting the Atlantic Ocean and Adjacent Water Areas. David N. Nettleship and Tim R. Birkhead, Eds. Academic Press, Orlando, FL, 1985. xx, 573 pp., illus. \$40; paper, \$19.95.

Atomic Excitation and Recombination in External Fields. M. H. Nayfeh and C. W. Clark, Eds. Gordon and Breach, New York, 1985. viii, 525 pp., illus. \$104. From a workshop, Gaithersburg, MD, Oct. 1984.

The Auditory Midbrain. Structure and Function in the Central Auditory Pathway. Lindsay Aitkin. Humana, Clifton, NJ, 1986. xii, 246 pp., illus. \$45. Contemporary Neuroscience.

Australian Psychology. Review of Research. Norman T. Feather, Ed. Allen and Unwin, Winchester, MA, 1985. x, 412 pp. \$25.95; paper, \$13.95.

Autonomic and Enteric Ganglia. Transmission and Its Pharmacology. Alexander G. Karczmar, Kyoza Koketsu, and Syogoro Nishi, Eds. Plenum, New York, 1986. xviii, 514 pp., illus. \$75.

Basic Techniques for Transmission Electron Microscopy. M. A. Hayat. Academic Press, Orlando, FL, 1986. xxviii, 411 pp., illus. \$58.50.

Behavior and Cancer. Sandra M. Levy. Jossey-Bass, San Francisco, 1985. xxii, 257 pp., illus. \$22.95. Jossey-Bass Social and Behavioral Science Series and Jossey-Bass Health Series.

The Behavior of Teleost Fishes. Tony J. Pitcher, Ed. Johns Hopkins University Press, Baltimore, 1986. xvi, 553 pp., illus. \$57.50.

The Biogeochemical Cycling of Sulfur and Nitrogen in the Remote Atmosphere. James N. Galloway et al., Eds. Reidel, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xiv, 249 pp., illus. \$39. NATO Advanced Science Institutes Series C, vol. 159. From an institute, St. Georges, Bermuda, Oct. 1984.

Contemporary Issues in Pesticide Toxicology and Pharmacology. Judith K. Marquis. Karger, Basel, 1986. xii, 108 pp. \$38. Concepts in Toxicology, vol. 2.

Contemporary Principles to Control Complex Objects. L. A. Rastrigin. Mir, Moscow, 1985 (U.S. distributor, Imported Publications, Chicago). 248 pp., illus. \$7.95. Translated with revisions from the Russian edition (1980).

Control of Leaf Growth. N. R. Baker et al., Eds. Cambridge University Press, New York, 1985. xii, 350 pp., illus. \$39.50. Society for Experimental Biology Seminar Series, vol. 27. From a seminar, Cardiff, Wales, April 1984.

The Cosmic Inquirers. Modern Telescopes and Their Makers. Wallace Tucker and Karen Tucker. Harvard University Press, Cambridge, MA, 1986. xii, 221 pp., + plates. \$20.

Cosmic Rays in Interplanetary Magnetic Fields. I. N. Toptygin. Reidel, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xiv, 375 pp., illus. \$64.50. Translated from the Russian edition (Moscow, 1983) by D. G. Yakovlev.

A Course of Experiments with He-Ne Laser. R. S. Sirohi. Halsted (Wiley), New York, 1985. viii, 106 pp., illus. \$19.95.

Current Issues in Climate Research. A. Ghazi and R. Fantechi, Eds. Reidel, Dordrecht, 1986 (U.S. distributor, Kluwer, Hingham, MA). xii, 356 pp., illus. \$59. From a symposium, Sophia Antipolis, France, Oct. 1984.

Denitrification in the Nitrogen Cycle. Han L. Goltzman, Ed. Plenum, New York, 1985. viii, 294 pp.,

illus. \$49.50. NATO Conference Series I, vol. 9. From a workshop, Braunschweig, West Germany, May 1983.

Design Optimization. John S. Gero, Ed. Academic Press, Orlando, FL, 1985. xiv, 298 pp., illus. \$35; paper, \$24.95. Notes and Reports in Mathematics in Science and Engineering.

Diet, Nutrition, and Cancer. A Critical Evaluation, Vol. 1, Macronutrients and Cancer. Bandaru S. Reddy and Leonard A. Cohen, Eds. CRC Press, Boca Raton, FL, 1986. viii, 175 pp., illus. \$64.

Diffraction Processes in Nuclear Physics. W. E. Frahn. Clarendon (Oxford), New York, 1985. xx, 179 pp., illus. \$32.50.

Diffusion. Mass Transfer in Fluid Systems. E. L. Cussler. Cambridge University Press, New York, 1985. xii, 525 pp., illus. Paper, \$24.95. Reprint, 1984 ed.

Economic Botany. Plants in Our World. Beryl Brintnall Simpson and Molly Conner-Ogorzalzy. McGraw-Hill, New York, 1986. xii, 640 pp., illus. \$35.95. A textbook directed toward "students with some scientific background" and emphasizing species of importance in the United States.

Foundations of Comparative Ethology. Gordon M. Burghardt, Ed. Van Nostrand Reinhold, New York, 1986. xxii, 441 pp., illus. \$48.50. Benchmark Papers in Behavior Series. A Hutchinson Ross Publication.

From Knowledge to Power. The Rise of the Science Empire in France, 1860-1939. Harry W. Paul. Cambridge University Press, New York, 1985. x, 415 pp. \$49.50.

Geochemical Thermodynamics. Darrell Kirk Nordstrom and James L. Monoz. Blackwell Scientific, Palo Alto, CA, 1986. x, 477 pp., illus. \$40.

Geography in Internationalizing the Undergraduate Curriculum. Salvatore J. Natoli and Andrew R. Bond, Eds. Resource Publications in Geography, Washington, DC, 1985. xii, 99 pp., illus. Paper, \$6.

Human Helminthiases in the Philippines. The Epidemiological and Geomedical Situation. Erhard Hinz. Springer-Verlag, New York, 1985. xvi, 315 pp., illus., + maps. \$45. Veröffentlichungen aus der Geomedizinischen Forschungsstelle der Heidelberger Akademie der Wissenschaften. Translation.

Human Hemoglobin Genetics. George R. Honig and Junius G. Adams III. Springer-Verlag, New York, 1986. xvi, 452 pp., illus. \$59.

Lake Gårdsjön. An Acid Forest Lake and Its Catchment. Folke Andersson and Bengt Olsson, Eds. Ecological Bulletins, Lund, Sweden, 1985. (distributor, Publishing House of the Swedish Research Council, Stockholm). 336 pp., illus. \$44. Ecological Bulletins, no. 37.

Lasers and Holographic Data Processing. N. G. Basov. Mir, Moscow, 1985. (U.S. distributor, Imported Publications, Chicago). 144 pp., illus. Paper, \$4.95. Advances in Science and Technology in the USSR: Technology Series. Translated from the Russian edition (Moscow, 1984) by P. S. Ivanov.

The Machinery of Nature. Paul R. Ehrlich. Simon and Schuster, New York, 1986. 320 pp., illus. \$18.95.

Malformations in Children From One to Seven Years. A Report From the Collaborative Perinatal Project. Ntinos C. Myrianthopoulos. Liss, New York, 1985. x, 329 pp. \$76.

Molecular Cytology. Jean Brachet. Vol. 1, The Cell Cycle. xiv, 424 pp., illus. \$59.50; paper, \$34.95. Vol. 2, Cell Interactions. xiv, 512 pp., illus. \$69.50; paper, \$39.95.

The Molecules of Life. Freeman, New York, 1986. viii, 139 pp., illus. \$21.95; paper, \$12.95. Readings from *Scientific American*.

Monoclonal Antibodies against Bacteria. Vol. 2. Alberto J. L. Macario and Everly Conway de Macario, Eds. Academic Press, Orlando, FL, 1985. xvi, 335 pp., illus. \$49.

Monoclonal Antibodies Against Bromodeoxyuridine. Joe W. Gray and Brian H. Mayall, Eds. Liss, New York, 1985. viii pp. + pp. 499-671, illus. \$29.50. Reprinted from *Cytometry*, vol. 6, no. 6.

More Than Parts. Biology and Politics. Lynda Birke and Jonathan Silvertown, Eds. Pluto, Dover, NH, 1986. 268 pp. Paper, \$11.95. Reprint, 1984 ed.

Multicomponent Polymer Materials. D. R. Paul and L. H. Sperling, Eds. American Chemical Society, Washington, DC, 1986. xii, 356 pp., illus. \$79.95. Advances in Chemistry Series, 211. Based on a symposium, Philadelphia, Aug. 1984.

Multigrid Methods for Integral and Differential Equations. D. J. Paddon and H. Holstein, Ed. Clarendon (Oxford), New York, 1985. xii, 323 pp., illus. \$47.50. Institute of Mathematics and Its Applications Conference Series, vol. 3. From a workshop, Bristol, England, Sept. 1983.

(Continued on page 1156)

NAB urging scientific community to participate in Summer Jobs for Youth program



The National Alliance of Business, in cooperation with the White House Office of Private Sector Initiatives, is hoping scientific and technical organizations will continue their active role in providing summer jobs for needy youth.

If you are not already a participant in this program—which found an estimated 300,000 jobs for carefully selected young people last summer—contact your local Private Industry Council (PIC) or the national office of the NAB (see below).

There are 594 PICs in existence. "Many PIC Boards have scientific and technical personnel as members," says William H. Kolberg, President of NAB. "The PICs, moreover, have the advantage of providing carefully screened applicants to organizations with summer job openings."

An added bonus for employers: The top 100 participants (in terms of numbers of jobs provided and the imaginativeness of their programs) will be honored next spring by President Reagan in a Rose Garden ceremony at the White House. "It's not based on sheer numbers of jobs," notes Kolberg. "This is one place where a small company can compete with the IBMs of the world."

Brochures and other materials can be provided in quantity by the NAB.



**National
Alliance of
Business** 1015 15th Street, N.W.
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THE WHITE HOUSE
WASHINGTON

Dear Fellow American,

One of the great challenges facing America today is the need to assist our nation's teenagers gain practical work experience that will prepare them for entry into the world of work.

Last year, companies across the nation hired several hundred thousand youngsters, thanks mainly to a growing economy and strong private sector involvement in our Summer Jobs for Youth Program. I am confident that by working together again this year we can do even better.

You can support the 1986 Summer Jobs for Youth campaign by reserving summer positions at each of your hiring sites, by contributing corporate funds to local Private Industry Councils which can create summer jobs, or by loaning company personnel to local organizations responsible for organizing summer jobs programs. The work experience gained by the teenagers seeking these summer jobs will be invaluable as they strive to develop productive skills.

This year we again should have another record performance. Our nation's economy continues to grow and our business/government partnership organizations are working more effectively than ever all across the country. With your help, and that of private employers in every section of the United States, I know we can extend a helping hand to our deserving teenagers who will be the backbone of the American workforce in the next decade.

My White House Private Sector Initiatives Office and the National Alliance of Business under its chairman, John Ong, will provide you with any assistance you might need in putting together an effective summer jobs program in your community.

I look forward to your continued support and involvement in our 1986 summer campaign to help young Americans find productive summer jobs again this year.

Sincerely,

Ronald Reagan

For your copies of the White House
Summer Jobs for Youth brochure, write to:

Summer Jobs '86
National Alliance of Business
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Washington, D.C. 20005

Name _____

Organization _____

Address _____

City _____

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or, telephone (202) 289-2900.

The Mystical Machine. Issues and Ideas in Computing. John E. Savage, Susan Magidson, and Alex M. Stein. Addison-Wesley, Reading, MA, 1986. xviii, 407 pp., illus. \$21.95.

The Names of Plants. D. Gledhill. Cambridge University Press, New York, 1985. viii, 185 pp. \$34.50; paper, \$9.95.

New Frontiers in Rare Earth Science and Applications. Xu Guangxian and Xiao Jimei, Eds. Science Press, Beijing, and Academic Press, Orlando, FL, 1985. In two volumes. Vol. 1, xx pp. + pp. 1-722 pp., illus. Vol. 2, xx pp. + pp. 723-1535, illus. The set, \$90. From a conference, Beijing, Sept. 1985.

Plant Cell/Cell Interactions. Ian Sussex *et al.*, Eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1985. xii, 151 pp., illus. Paper, \$27. Current Communications in Molecular Biology. From a meeting, Cold Spring Harbor, NY, Oct. 1985.

Practical Physics. G. L. Squires. 3rd ed. Cambridge University Press, New York, 1985. xii, 215 pp., illus. \$44.50; paper, \$17.95.

The Preservation of Species. The Value of Biological Diversity. Bryan G. Norton, Ed. Princeton University Press, Princeton, NJ, 1986. xii, 305 pp. \$29.50.

The Price of Truth. The Story of Rare-Earth Elements. D. N. Trifonov. Mir, Moscow, 1984 (U.S. distributor, Imported Publications, Chicago). 133 pp., illus. Paper, \$3.95. Translated from the Russian edition (Moscow, 1977) by O. Glebov and I. Poluyan.

Prime Numbers. William and Fern Ellison. Wiley-Interscience, New York, and Hermann, Paris. 1985. xii, 417 pp., illus. Paper, \$49.95.

Principles of Physical Sedimentology. J. R. L. Allen. Allen and Unwin, Winchester, MA, 1985. xvi, 272 pp., illus. \$40; paper, \$24.95.

Principles of Polymer Composites. A. A. Berlin *et al.* Springer-Verlag, New York, 1986. x, 124 pp., illus. \$57. Polymers/Properties and Applications, vol. 10.

Problems in the Theory of Probability. B. A. Sevastyanov, V. P. Chistyakov, and A. M. Zubkov. Mir, Moscow, 1985. (U.S. distributor, Imported Publications, Inc., Chicago, IL). 237 pp. \$7.95. Translated from the Russian edition (Moscow, 1980) by Irene Aleksanova.

Quantitative Neuroanatomy in Transmitter Research. Luigi F. Agnati and Kjell Fuxe, Eds. Plenum, New York, 1985. xiv, 418 pp., illus. \$69.50. Wenner-Gren Center International Symposium Series, vol. 42. From a symposium, Stockholm, May 1984.

Quantitative Stratigraphy. F. M. Gradstein *et al.*, Reidel, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xii, 598 pp., illus. \$77.

Quantum Field Theory and Statistical Mechanics. Expositions. James Glimm and Arthur Jaffe. Birkhäuser, Boston 1985. viii, 418 pp. \$64.95; paper, \$29.95. Collected Papers, vol. 1.

Quantum Mechanics. A. A. Sokolov *et al.* Mir, Moscow, 1984 (U.S. distributor, Imported Publications, Chicago). 496 pp. \$10.95. Translated from the Russian edition (Moscow, 1979) by Ram S. Wadhwa.

Response and Stability. An Introduction to the Physical Theory. A. B. Pippard. Cambridge University Press, New York, 1985. xii, 228 pp., illus. \$49.50; paper, \$17.95.

Results and Problems in Combinatorial Geometry. V. G. Boltjansky and I. Ts. Gohberg. Cambridge University Press, New York, 1985. x, 108 pp., illus. \$29.95; paper, \$9.95.

The Star Guide. A Unique System for Identifying the Brightest Stars in the Night Sky. Steven L. Beyer. Little, Brown, Boston, 1986. xii, 404 pp., illus. \$22.95; paper, \$11.95.

Star Wars and the State of Our Souls. Deciding the Future of Planet Earth. Patricia M. Mische. 2nd ed. Winston, Minneapolis, 1985. viii, 136 pp. Paper, \$5.30.

State of the World 1986. A Worldwatch Institute Report on Progress toward a Sustainable Society. Lester R. Brown, project director. Norton, New York, 1986. xviii, 263 pp. Paper, \$9.95.

Statistics on Alcohol and Drug Use in Canada and Other Countries. Data Available by September 1984. 2 vols. Vol. 1, Statistics on Alcohol Use. xxii, 316 pp. Vol. 2, Statistics on Drug Use. xxiv, 370 pp. Paper. Each vol., \$C30; the set, \$C50.

Vitamins and Cancer. Human Cancer Prevention by Vitamins and Micronutrients. Frank L. Meyskens, Jr., and Kedar N. Prasad, Eds. Humana, Clifton, NJ, 1986. xx, 481 pp., illus. \$69.50. From a conference, Tucson, Feb. 1985.

Who's Who in Frontiers of Science and Technology. 2nd ed. Marquis Who's Who, Chicago, 1985. xvi, 606 pp. \$99.50.

Personnel Placement

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Psychobiologist, postdoctoral experience. Background in behavioral pharmacology, neuroanatomy, knowledgeable in small animal surgical techniques, biological assays, statistics, and computer programming, seeks research position. Will relocate. Box 92, SCIENCE. X

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Reproduction/Toxicology/Teratology/Anatomy. Doctorate experience; teaching gross anatomy, histology, embryology, and biology. Research: reproduction-toxicology and teratology. Seeks position in health/life sciences. Immediate relocation. Box 105, SCIENCE. X

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Mr. Shlomo Harari, Plant Biotech Industries Ltd., Mobile Post Ashrat 25201, Israel.

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GENERAL: The Microbiology Section at the Division's Long Pocket Laboratories is engaged on a study of the vectors, pathogenesis and immunity of bovine ephemeral fever. The particular objective of the appointee will be to define the fractions of the ephemeral fever virus which induces immunity to a disease and carry out preparatory steps towards its eventual manufacture by the appropriate biotechnological means.

DUTIES: The appointee will undertake a study of bovine ephemeral fever viruses and relevant related viruses as a preliminary to selecting the most suitable virus strains for use as a non-living vaccine against ephemeral fever. The study will involve the fractionation of viruses by appropriate techniques; the production and use of suitable monoclonal antibodies; and the cloning of antigens capable of producing protection in cattle against infection. This will require co-operation with other members of the group for testing of antigens in cattle. Assistance will be provided by an experimental scientist familiar with ephemeral fever virus culture. The direction of vaccine development will in later phases be dependent on the information gained in the first phase. Co-operation with a biochemist producing specific antigenic and antibody probes for the detection of ephemeral fever virus in cattle or virus in insects will be expected.

QUALIFICATIONS: A PhD degree or equivalent qualifications with research experience in immunological or recombinant DNA techniques related to viruses.

TENURE: A term of 2½ years with Australian Government superannuation benefits is available.

APPLICATIONS: Stating relevant personal particulars, including details of qualifications and experience, the names of at least two professional referees and quoting reference No A2273, should be directed to:

The Chief
CSIRO Division of Tropical Animal Science
Private Bag No 3
INDOOROPILLY QLD 4068
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ASSISTANT PROFESSOR Laboratory of Toxicology HARVARD SCHOOL OF PUBLIC HEALTH

The Laboratory of Toxicology is searching for a junior faculty member to establish an independent research and teaching program on molecular and/or cellular mechanisms of toxicity and to complement the existing faculty whose interests include molecular mechanisms of mutagenesis, DNA repair genes, receptor-mediated toxicity, chemical carcinogenesis and tumor promotion, reproductive toxicology, and biochemical regulation of epithelial cell models.

Send curriculum vitae, a statement of research interests, and the names of three evaluators to:

Professor A. H. Tashjian, Jr.
Laboratory of Toxicology
Harvard School of Public Health
665 Huntington Avenue
Boston, MA 02115

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

ASSISTANT PROFESSOR ANALYTICAL NEUROCHEMISTRY DEPARTMENT OF PSYCHIATRY— STANFORD

To direct a program dealing with neurotransmitters, including biogenic amines and neuropeptides, and their relationship to psychiatric disorders. Applicants must be able to develop an independent research program, develop new procedures, direct postdoctoral, undergraduate, graduate and medical students, as well as participate in collaborative research. Please send applications including curriculum vitae, list of publications, no more than four reprints, a statement of two pages specifying research goals and plans, and the names and addresses of four references to: **The Search Committee for Analytical Neurochemistry, R. D. Ciaranello, M.D., Department of Psychiatry, Stanford University School of Medicine, Stanford, CA 94305.** *Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.*

ASSISTANT PROFESSOR OF ANATOMY: Applications are invited for a tenure-track position available 1 October 1986. Preference will be given to applicants with postdoctoral experience in, but not limited to, neurobiology, immunology/hematology, cell biology, or cardiovascular anatomy. The successful candidate will be expected to pursue a vigorous research program and obtain extramural funding. Teaching responsibilities will be initially minimal, but the candidate must be able to contribute to the teaching program. Candidates should send current curriculum vitae, a statement of research plans, and expertise and the names of three referees to: **Dr. Gordon L. Todd, Anatomy Department Search Committee, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, NE 68105.** Closing date for applications is 1 September 1986. *The University of Nebraska is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF ANATOMY

Louisiana State University Medical Center, New Orleans, is seeking a candidate for a tenure-track position in its Department of Anatomy. The candidate is required to have a Ph.D., a productive research program, and experience in teaching cell biology/histology or gross anatomy. Respond to: **Dr. Marilyn L. Zimny, Head, Department of Anatomy, LSU Medical Center, 1901 Perdido Street, New Orleans, LA 70112-1393.** *LSUMC is an Equal Employment Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSORS OF PHARMACOLOGY

Eastern Virginia Medical School invites applications for two tenure-track positions in the areas of (i) molecular and/or cellular cardiovascular pharmacology, and (ii) drug metabolism and/or disposition. Candidates should have a Ph.D. in pharmacology or a related biomedical science, at least 2 years of postdoctoral experience, and be capable of developing a vigorous research program. The positions are available immediately. Applicants should submit curriculum vitae, a statement of research interests and goals, and at least three references to: **Search Committee, Department of Pharmacology, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501.** *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT RESEARCH SCIENTIST position available for Ph.D. in biochemistry or cell biology. Proficiency in cell culture techniques and basic biochemical techniques essential. Additional expertise in immunological or biophysical techniques desirable. Duties include isolation of sweat glands, preparation of dispersed cells, establishment of cell cultures, tracer uptakes, fractionation of cellular homogenates, and analysis of receptors and intracellular mediators of stimulus secretion coupling, and prostaglandins and phospholipid metabolism. Salary commensurate with experience. Send résumé to: **Dr. Kenzo Sato, Department of Dermatology, University of Iowa Hospitals and Clinics, Iowa City, Iowa, 52242.** *The University of Iowa is an Equal Opportunity/Affirmative Action Employer.*



ASSOCIATE EDITOR NATIONAL ACADEMY OF SCIENCES

For staff of multidisciplinary semi-monthly scientific journal. Ph.D. or equivalent in a biological science or chemistry and at least 2 years of further experience required. Excellent command of English essential; some editorial experience preferred. Send résumé to: **position number 170.026, National Academy of Sciences, 2101 Constitution Avenue, NW, Washington, DC 20418.** *An Equal Opportunity Employer.*

BIOLOGICAL OCEANOGRAPHY CHESAPEAKE BAY INSTITUTE THE JOHNS HOPKINS UNIVERSITY

The Chesapeake Bay Institute is seeking applicants for a senior position in biological oceanography. Candidates should have a minimum of 8 to 10 years of experience and possess an excellent scholarly record in research. The successful applicant will be expected to develop a strong research program in the institute, and should have some administrative ability to provide leadership for the biological oceanography group. We are particularly interested in applicants whose backgrounds will complement our existing staff of plankton biologists and microbiologists, but will base our selection on the strength of the applicant, regardless of specific research area. Respondents should submit a letter of application describing research interests and background, current curriculum vitae, and names and addresses of four references to: **Dr. Dennis A. Powers, Acting Director, Chesapeake Bay Institute, 4800 Atwell Road, Shady Side, Maryland 20764.** The closing date is 1 August 1986. *The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF PHYSIOLOGY:

Applications are invited for a position in the Department of Environmental Science and Physiology from individuals with an earned doctorate and research experience in respiratory physiology, especially in the area of respiratory muscles. Proven teaching ability is required. *Expressions of interest are particularly invited from women and minority candidates.*

Please send curriculum vitae and the names of three references to:

**Chairman
Search Committee for Assistant Professor
of Physiology
Dean's Office
Harvard School of Public Health
677 Huntington Avenue
Boston, MA 02115**

The Department of Biology at Georgia State University invites applications for an anticipated tenure-track position (**ASSISTANT PROFESSOR** level, effective September 1987). Preference will be given to candidates with specialization in developmental biology. Candidate should have 2 to 3 years of postdoctoral experience and demonstrate evidence of outstanding potential for independent research. Salary will be commensurate with qualifications. The successful candidate will develop an active, independent research program, instruct in introductory biology and develop an advanced course for doctoral students. Applications, including curriculum vitae, reprints, a statement of research plans, and three letters of reference should be sent to: **Chairman, Department of Biology, Georgia State University, Atlanta, Georgia 30303.** Deadline for receipt of applications is 1 September 1986. *Georgia State University, a unit of the University System of Georgia, is an Equal Educational Opportunity Institution and is an Equal Opportunity/Affirmative Action Employer in compliance with title IX and other civil rights laws.*

BIOCHEMICAL PHARMACOLOGIST

The Department of Biochemical Pharmacology of the State University of New York at Buffalo invites applications for a tenure-track position available fall 1986 at the level of an assistant professor. Candidates should have a Ph.D. in pharmacology or related areas and a minimum postdoctoral experience of 1 to 2 years. Candidates whose research experience reflects a molecular approach to cardiovascular or CNS pharmacology are preferred, but candidates with other research interests will be considered. Successful candidates will be expected to develop an independently funded research program and participate in the teaching and graduate and undergraduate courses.

Applications, including a letter of intent, curriculum vitae, a brief statement of research interests, and the names of three references should be sent to: **Vijay C. Swamy, Department of Biochemical Pharmacology, School of Pharmacy, Faculty of Health Sciences, 313 Hochstetter Hall, State University of New York at Buffalo, Buffalo, New York 14260.**

An Affirmative Action/Equal Opportunity Employer.

BIOLOGIST. Full-time, temporary, assistant professor, from September 1986 through May 1987. Teach introductory laboratory courses in genetics, cell biology, non-majors biology, and immunology. Ph.D. in biology preferred; or Ph.D. candidate with appropriate education and experience. Send letter of application, current curriculum vitae, three letters of recommendation by 13 June 1986 to: **Dr. Paul W. Schwalbe, Department of Biological Sciences, Lock Haven University, Lock Haven, PA 17745.** Telephone: 717-893-2021. Lock Haven University is located on the Northeast Branch of the Susquehanna River, 30 miles northeast of Penn State. *Lock Haven University is an Equal Opportunity Employer.*

BOTANIST. Assistant Professor. Possible tenure-track. To teach general botany, plant taxonomy, and/or course in specialty. Responsible for coordination/teaching of general biology laboratories. Desire to teach undergraduates at an outstanding institution and in a liberal arts context is primary. Research encouraged; Ph.D. required. Send curriculum vitae, names of three references, and letter to: **Dr. Gerald Kreider, Chairman Biology Department, Albright College, P.O. Box 516, Reading, PA 19603.** *Albright College encourages applications from women and minorities.*

AUSTRALIA
CSIRO
RESEARCH FELLOW
(REMOTE SENSING OF
ATMOSPHERIC CONSTITUENTS)
A\$27,475-A\$40,410
DIVISION OF ATMOSPHERIC RESEARCH
ASPENDALE VIC

GENERAL: The Division of Atmospheric Research has a staff of 130 including 70 professional scientists and undertakes research into physical and chemical aspects of atmospheric phenomena and related areas.

The Atmospheric Constituents Program is concerned with the composition and chemistry of the atmosphere on a global, regional and local scale with particular reference to constituents relevant to climate change and atmospheric pollution. The successful applicant will be a member of this program but will be required to interact closely with members of the Clouds and Radiation program of the Division which is active in remote sensing and lidar studies.

DUTIES: To initiate a research and development program in the remote sensing of atmospheric constituents which reflects the existing status of this field internationally, potential applications of the techniques, and the feasibility and appropriateness of CSIRO's involvement in this field. While these represent the overall objectives of the appointment, there will be considerable freedom for the appointee to pursue his/her own ideas.

QUALIFICATIONS: A PhD degree or equivalent qualifications in Physics or Chemistry plus proven research ability. Experience in infrared spectroscopy, remote sensing, laser and space technology or satellite instrumentation would be advantageous.

TENURE: A term of 3 years, with the possibility of a further term of 2 years. Australian Government superannuation benefits available.

APPLICATIONS: Stating relevant personal particulars, including details of qualifications and experience, the names of at least two professional referees and quoting reference No A1825, should be directed to:

The Chief
 CSIRO Division of Atmospheric Research
 Private Bag No 1
 MORDIALLOC VIC 3195
 AUSTRALIA
 by JULY 11, 1986.

CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER



UNIVERSITY OF CAPE TOWN

Chair in the Department of Botany

Applications are invited for the above Chair which is currently vacant.

Applicants should be recognised scholars and, although no particular field of botanical specialisation for this Chair is specified, the University wishes to strengthen teaching and research in plant taxonomy, developmental physiology and ecophysiology.

Salary range R37 482-R45 069 per annum with an annual bonus and attractive staff benefits.

Applications should submit a full curriculum vitae and the names and addresses of three referees, not later than 2 June 1986 to the Registrar (Attention: Appointments Office), University of Cape Town, Rondebosch, 7700, Republic of South Africa, quoting Ref. 34 clearly on envelope and letter. Further information may be obtained from the Registrar or from the Counsellor, Science and Technology, South African Embassy, Suite 350, 4801 Massachusetts Avenue, N.W. Washington, D.C. 20016.

The University's stand against apartheid and all racially discriminating legislation is on record. Information on this as well as on the University's policy not to discriminate in the appointment of staff or the selection of students on grounds of sex, race or religion is obtainable on request.

The University of Cape Town is an equal opportunity employer.

BWRA ● 1005

Postdoctoral Scientist Medicinal Chemistry

The Medicinal Chemistry Department of SK&F Laboratories is seeking a Postdoctoral Scientist to work in an environment designed to foster innovative research and promote personal and professional growth. Publication of research findings in leading journals and full interaction with the scientific community are strongly encouraged. Postdoctoral assignments are normally of two years duration.

The successful candidate will isolate and characterize enzymes and structural proteins; perform rigorous kinetic analyses of enzyme-inhibitor interactions; interact with synthetic chemists to aid in the design of enzyme inhibitors of therapeutic potential; design and conduct experiments to determine kinetic and chemical mechanisms of enzyme catalyzed reactions; and provide enzymological support for synthetic chemists engaged in the synthesis of mechanism-based therapeutic agents.

The successful candidate must have:

- Ph.D. in Biochemistry or equivalent required.
- Experience in the isolation and characterization of enzymes required.
- Experience in the study of enzymes with inhibitors (Kcat, tight binding, or "multisubstrate" types) preferred.

We are located near Valley Forge, PA, in a new state-of-the-art research complex and offer an excellent salary, benefits and relocation package. Please forward your c.v. to George P. Kissell, Jr., Manager, Personnel Relations, SK&F Laboratories, a division of SmithKline Beckman Corporation, 1552 Spring Garden Street, Phila., PA 19101. We are an equal opportunity employer. M/F/H/V.

SK&F
 A SmithKline Beckman Company

Research and Science Opportunities at NASA Headquarters

A visiting Senior Scientist Program has been established at the National Aeronautics and Space Administration (NASA) Headquarters to enlist University Space Scientists, current in their disciplines, to assist the NASA Office of Space Science and Applications in the planning and performance of its science program responsibilities. The Jet Propulsion Laboratory (JPL) has responsibility for this program.

Appointees will be full-benefit basis JPL employees assigned to NASA Headquarters in Washington, D.C. for the purpose of assisting NASA in planning and coordinating current and future Space Science Programs; they are expected to return to their home institutions following their assignment at NASA Headquarters.

Candidates will be considered on the basis of their technical and scientific expertise and accomplishments as they apply to their particular research disciplines and on their demonstrated potential for leadership. Applicants must be U.S. Citizens or Permanent Residents.

One year appointments, renewable for a second year, are envisioned to allow ample opportunity for effective interactions between NASA and the scientific community and for the appointees to become spokesmen for that community within the NASA organization. Currently, we have the following opportunities available:

Space Plasma Physics
 Visible and Ultraviolet Astronomy
 Infrared and Radio Astronomy
 Solar and Heliospheric Physics
 Land Processes Research
 Oceanic Processes

Life Sciences Flight Programs
 Space Medicine
 Space Station Life Sciences
 Plant Physiology
 Microgravity Sciences and Applications

For further information, please contact: Dr. Harry Ashkenas, Jet Propulsion Laboratory, 180-900, Dept. T70, 4800 Oak Grove Drive, Pasadena, California 91109, (818) 354-8251.


JPL

Jet Propulsion Laboratory
 California Institute of Technology

NASA

National Aeronautics and
 Space Administration

An Equal Opportunity Employer M/F



Research Associate

University affiliated medical center in New York City seeks post-doctoral Research Associate in molecular biology to study the regulations of globin-gene expression during mammalian ontogeny. Experience is desirable in DNA/RNA isolation procedures, gel electrophoresis, DNA libraries, etc. These studies are supported by a 5 year NIH grant. The successful candidate will be eligible for an appointment at Columbia University College of Physicians and Surgeons. Attractive salary and comprehensive benefits. Send resume and names of three references to: **Dr. T. Boussios, Hematology/Oncology Division, St. Luke's-Roosevelt Hospital Center, 114th & Amsterdam Avenue, New York, NY 10025.** Equal Opportunity Employer M/F

ST. LUKE'S ROOSEVELT
Hospital Center

SCIENTIFIC AFFAIRS COORDINATOR

Recognized worldwide for the introduction of NutraSweet products and Equal brand sweetener, The NutraSweet Company continues to set the pace for innovation and talent in the dynamic food industry.

We currently have an opportunity for a self-motivated individual in the area of Nutrition and Medical Affairs.

The **Scientific Affairs Coordinator** will be responsible for representing The NutraSweet Company in external scientific affairs activities and interfacing with scientific and food industry representatives. This position will also be required to provide reviews of information and evaluation of scientific data for management.

Requirements include a Ph.D. in Life Sciences and 1-2 years research experience, preferably within the food industry. Frequent travel is necessary.

The NutraSweet Company offers competitive salary and benefit programs along with the opportunity to grow with an industry leader. For confidential consideration, please send curriculum in vitae and salary history to:

**M.L. Smedinghoff, Personnel Manager
The NutraSweet Company
Dept. AC-012
P.O. Box 1111
Skokie, IL 60076**



equal opportunity employer m/f

ARGONNE NATIONAL LABORATORY


Environmental Research Division

We are seeking a Geochemist/Isotope Geochemist to develop and execute a research program on the environmental geochemistry of energy-related pollutants with particular emphasis on the source, transport and fate of these entities in rock/water systems. The successful candidate will have considerable expertise in the geochemistry of rock/fluid systems, analytical and separations chemistry, and biogeochemical processes of trace inorganic constituents in surface and subsurface waters. Ability to implement and complete projects leading to publication of results is imperative.

Candidates should have a Ph.D. degree or equivalent experience in their discipline. Salaries are competitive. Send curriculum vitae by July 15, 1986 to **Box J-ERD-25169-55** to the attention of:

**Rosalie L. Bottino
ARGONNE NATIONAL LABORATORY
9700 S. Cass Avenue
Argonne, IL 60439**

Argonne is an equal opportunity/affirmative action employer.



Fellowships in Science Broadcast Journalism


WGBH-Boston, a major producer of broadcast programs including NOVA, is again seeking six proven science writers with a strong record of published articles for a general audience. Successful applicants will be highly skilled journalists willing to risk their talents on a new career in broadcast science reporting and programming.

In return for that commitment, WGBH will train six Fellows for eleven months in the special skills of radio and television production. Training is rigorous, and requires making programs in a working professional environment for local and national broadcast.

The third—and last—year of the Fellowships will begin in January of 1987, and carries a stipend of \$25,000. Applications must be received by September 1, 1986.

For details, please send a resume and letter of interest to:

David Kuhn, Director
Macy Fellowships
WGBH
125 Western Avenue
Boston, MA 02134



UNIVERSITY OF HONG KONG

Readers/Senior Lecturers in Anatomy

Applications are invited for two posts of Reader/Senior Lecturer in Anatomy:

Post A: Applicants should be experienced teachers of gross anatomy. The appointee will be expected to play a major role in the co-ordination and development of the Department's teaching programmes in gross anatomy, principally for preclinical medical students. Applicants should preferably hold a medical qualification but this should not discourage other experienced teachers of gross anatomy from applying.

Post B: Applicants should have a dental or medical degree and/or a postgraduate qualification in Science. As it is hoped that the appointee, in addition to general teaching duties for preclinical students, will assume a co-ordinating role in courses in dental anatomy which occur in the preclinical and clinical parts of the dental curriculum, suitable experience in teaching would be an advantage.

Both appointees will be expected to have a strong research commitment with evidence of original achievement in his or her chosen field. The Department has facilities for the prosecution of many areas of anatomical research including Neurobiology, Neuroendocrinology, Cell Biology, Reproductive Biology, Human Growth, Anthropology and Oral Biology. Applicants should make clear which post (A or B) they wish to be considered for. Annual salaries (superannuable) are on the scales: Reader: HK\$261,060–346,860 (9 points). Senior Lecturer: HK\$250,260–336,180 (9 points) (U.S.\$1 = HK\$780 as of March 19, 1986). Starting salary will depend on qualifications and experience. At current rates, salaries tax will not exceed 17% of gross income. Housing at a rental of 7½% of salary, children's education allowances, leave, and medical benefits are provided. Further particulars and application forms may be obtained from the Secretary General, Association of Commonwealth Universities (Apts), 36 Gordon Square, London WC1H 0PF, or from the Appointments Unit, Secretary's Office, University of Hong Kong, Hong Kong. Closes 23 June 1986 or as soon as possible thereafter.

ANTI-CANCER FOUNDATION OF THE UNIVERSITIES OF SOUTH AUSTRALIA

FELLOWSHIPS IN CANCER RESEARCH

Applications are invited from males and females for three Fellowships in Cancer Research which will fall vacant during the latter part of 1986, and early part of 1987. One of the Fellowships requires that the occupant must undertake studies in the field of leukaemia research, preferably in the field of adult leukaemia.

The successful applicants will work in South Australia in either a Hospital, Research Laboratory or University Department.

ELIGIBILITY

The Fellowships are intended to support persons below age 35 who are well established in a research career, as assessed by published works and reports of referees.

HOW TO APPLY

Applicants should first correspond with the head of the department in one of the relevant institutions in South Australia and construct a research project which is acceptable to that department and to the applicant's own interest and previous experience. Applications should be submitted directly to the Foundation, and should include two copies of a detailed research project and of the candidate's curriculum vitae, which should include a list of published work, grants received and outline of previous research experience. The names of three referees should be included.

SELECTION

Selection will be based on an assessment of the applicant's record and the scientific worth of the research project. An interview will be conducted with the applicant (or nominee if the applicant resides outside Australia) following satisfactory reports by outside assessors.

SALARY AND CONDITIONS

The salaries being offered will commence between A\$27,233 and A\$35,777, depending on past experience and qualifications and will thereafter follow the Research Fellow Scales of the Universities of South Australia. The three year period of appointment is not renewable.

Maintenance Grant: up to A\$3,000 per year.

The institution where the work is carried out will determine all other conditions of employment.

Applications should be addressed to: **The Chief Executive Officer, Anti-Cancer Foundation, Rundle Mall, P.O. Box 55, ADELAIDE SOUTH AUSTRALIA 5000.**

Telephone: (08) 228 5070.

Closing date: 31 July 1986

Research Fellow CHEMISTRY

The Department of Medicinal Chemistry-Immunology & Inflammation of Merck Sharp & Dohme Research Laboratories has an opening for a Ph.D. level organic chemist with a strong background in organic synthesis and three or more years experience, in addition to any post-doctoral study. Our laboratory offers a sophisticated research environment with multi-disciplinary research projects which will challenge your creativity and broaden your technical expertise.

The successful candidate must possess a demonstrated ability to solve chemical problems creatively along with a strong commitment to science. Medicinal Chemistry experience would be desirable.

Responsibilities include supervision of one or more medicinal chemical laboratories, providing major scientific guidance and program direction. Program direction will involve expert skills in organic chemistry, a facility for critical evaluation of biological data, and the ability to interact productively with scientists of various disciplines involved in a project. Administrative functions will be minimal, and the incumbent will be expected to participate actively in the laboratory. It is expected that novel and significant synthetic chemical and medicinal chemical findings will be reported to the scientific community when appropriate.

Salary and benefits are excellent, as well as growth potential. We are located in a campus-like setting only 25 miles from New York City. If interested, please send resume with salary requirements to **Mr. Luis F. Ballester, R80M-TL1, Merck Sharp & Dohme Research Laboratories, P.O. Box 2000, Rahway, NJ 07065.**

EEO/AA/VH/EMPLOYER



MERCK & CO., INC.

DIRECTOR

Marine and Coastal Sciences Institute

Rutgers, The State University of New Jersey, seeks a world-class scientist to become Director of a newly established Institute of Marine and Coastal Sciences. The selected individual will be expected to play a key role in the structuring of the Institute and associated graduate and research programs, planning of new facilities, and hiring of new faculty and staff.

The successful candidate will oversee the internal research programs in marine and coastal sciences of Rutgers University as well as the activities of the newly created Fisheries and Aquaculture Technology Extension Center and its Director (see SCIENCE, Vol. 231, p. 162).

Salary is open and competitive at the highest national level. The Institute Director will also hold a tenured faculty appointment in an appropriate department of the University. Nominations and applications, including a curriculum vitae and the names of three references, should be sent by June 20, 1986 to:

Dr. Richard A. Lutz
Chair, Search Committee
c/o Office of the Vice President
for University Administration
and Personnel

RUTGERS

Old Queen's Building
New Brunswick, New Jersey 08903

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS

An Affirmative Action/Equal Opportunity Employer

MEDICAL LIAISON OFFICER

We are a leading international pharmaceutical organization with principal interests in cardiovascular diseases, asthma, neurology, immunology, transplantation and endocrinology. Due to expansion, we are seeking scientists with knowledge of pharmacology and physiology who are interested in preparing and presenting scientific information to specialists.

Responsibilities include:

- selection and synthesis of publications along with preparation of materials to be communicated to hospitals and medical schools,
- contacting medical specialists in hospitals and medical schools,
- providing scientific support to the Marketing and Medical departments.

The ideal candidate will have a Ph.D. specializing in cardiovascular pharmacology, allergy, immunology, transplantation or endocrinology. Candidates with experience in other areas will also be considered. Excellent communications skills are required, along with a knowledge of clinical trials and methodology. Bilingualism is an asset.

The location will be Toronto or Montreal. Travel throughout Canada could be required.

If you enjoy working in a challenging environment and possess the above qualifications, please forward your curriculum vitae, including salary requirements, in confidence to:

Mrs. Betty Beck
Personnel Services Administrator
SANDOZ CANADA INC.
P.O. Box 385
Dorval, Québec, Canada
H9R 4P5

An equal opportunity employer.

SANDOZ



POSITIONS OPEN

BIOCHEMISTRY/TISSUE CULTURE

Applicants are being sought for a tenure-track position at the level of **ASSISTANT or ASSOCIATE PROFESSOR** with significant experience and demonstrated accomplishments in tissue culture in both neural and non-neural tissues. Candidates should be able to develop a creative research program in areas clinically relevant to psychiatry and the neurosciences, as well as being able to join in collaborative research. Candidates should be either M.D. psychiatrist or Ph.D. biochemist. Background in metabolism is advantageous. Applicants should send curriculum vitae and references to: **Dr. Robert W. Gwynn, Department of Psychiatry and Behavioral Sciences, University of Texas Medical School, P.O. Box 20708, Houston, Texas 77225. An Equal Opportunity Employer. Women and minorities are encouraged to apply.**

BIOSENSOR RESEARCH

The Bioengineering Research Laboratory at SRI INTERNATIONAL (formerly Stanford Research Institute) is seeking a professional to work in and help build a growing biosensor program. Qualified candidates must possess knowledge of polymer synthesis, deposition techniques, and some electrochemistry. Familiarity with enzyme immobilization techniques is highly desirable. Experience in electrochemical measurements and clinical assays would be helpful. The successful candidate must be able to carry out and lead laboratory work, as well as develop concepts and write proposals. Experience in project leadership and a demonstrated record of successful proposal writing highly desirable. Salary commensurate with experience.

For immediate consideration, please send résumé, plus three references to: **Michael Patrick, SC-5, SRI INTERNATIONAL, 333 Ravenswood Avenue, Menlo Park, CA 94025. Equal Opportunity Employer.**

CELL/MOLECULAR BIOLOGISTS

The Department of Anatomy and Cell Biology, Medical University of South Carolina, is expanding its research strength in the area of **SECRETION**. Applications are invited for two or more positions at the levels of tenure-track assistant professor through tenured full professor. We are seeking individuals who will establish independent research programs and who would benefit by taking collaborative, multidisciplinary approaches to this problem. We are particularly interested in scientists working on the regulation of gene expression, intracellular trafficking of secreted proteins, and intracellular signaling, but welcome applications from all individuals using modern, innovative techniques to investigate the secretory process. Applicants who can contribute to departmental teaching efforts (cell biology, gross anatomy, histology, developmental biology, neuroanatomy) will receive special consideration.

Interested individuals should send curriculum vitae, a history of recent grant support, and have three letters of recommendation forwarded to:

**Dr. L. Stephen Frawley
Department of Anatomy and Cell Biology
Medical University of South Carolina
171 Ashley Avenue
Charleston, South Carolina 29425-2203
Telephone: 803-792-3526**

CELLULAR IMMUNOLOGIST

Cellular immunologist with specific interest in infections and inflammation. Appointment as instructor or assistant professor in the Department of Surgery, University of Medicine and Dentistry of New Jersey-Rutgers Medical School, to join a research group studying surgical implants and prostheses. Submit curriculum vitae and three references to: **Ralph S. Greco, M.D., Professor and Chief, Section of General Surgery, UMDNJ-Rutgers Medical School, CN 19, New Brunswick, NJ 08903. An Equal Opportunity/Affirmative Action Employer, M/F/H/V.**

CHEMICAL RESEARCH ENGINEER, 4-month position, \$3010 monthly to operate pilot fermenters. Applicant must have Ph.D. in chemical engineering and dissertation on spent sulfite liquor fermentation by *Candida shehatae*. Respond with résumé to: **Georgia-Pacific Corporation, Box 1236, Bellingham, WA 98227. Equal Opportunity Employer.**

POSITIONS OPEN

Ph.D. with research experience in **CARDIOVASCULAR PHYSIOLOGY** and research techniques including surgical, radioisotopes, ultrasound, and drug studies. Salary commensurate with experience. Address inquiries and curriculum vitae to: **Chairman, Department of Medicine, East Carolina University School of Medicine, Greenville, NC 27834. Equal Opportunity Employer thru Affirmative Action.**

CHAIRPERSON, DEPARTMENT OF CHEMISTRY, CLARKSON UNIVERSITY. Applications and nominations are invited for chairperson and professor of chemistry. We seek an active research scholar who will provide leadership in building a world-class department. There are no restrictions on area of research. Applications will be accepted until the position is filled. Send résumé, publications list, and names of several references to: **Professor Milton Kerker, Chairperson Search Committee, Clarkson University, Potsdam, NY 13676. Clarkson University is an Equal Opportunity/Affirmative Action Employer.**

CLINICAL NEUROPSYCHOLOGIST

The Department of Neurology is accepting applications for the position of clinical neuropsychologist in the Division of Behavioral Neurology. Psychologist will supervise neuropsychological examinations of adult patients with known or suspected brain damage, and will diagnose complex cognitive/behavioral syndromes and write consultation reports. The position requires academic knowledge associated with a Ph.D. degree in clinical psychology, or clinical neuropsychology, including 1 year of internship or postdoctoral experience, specialized training in neuropsychology, or an equivalent combination of education and experience. Salary is commensurate with education and experience. Interested applicants should forward curriculum vitae and names of three references to: **Mary Hensley, Administrator, Department of Neurology, University of Iowa Hospitals, Iowa City, Iowa 52242. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.**

CLINICAL NUTRITION INSTRUCTOR

Masters degree in nutrition or related fields with 2 years of clinical experience in nutrition counseling. A registered dietician with teaching experience at college level preferred. Part-time, possibility of full-time. Application deadline 30 June 1986. Send résumé to: **Personnel Office, Los Angeles College of Chiropractic, 16200 Amber Valley Drive, Whittier, CA 90604.**

DIRECTOR OF CLINICAL MEDICINE (SENIOR INVESTIGATOR)

Immediate need for a research based physician with extensive malaria patient experience. Will be responsible for all aspects of the clinical/field trials of malaria vaccines, including but not limited to protocol development, monitoring, and related clinical backstopping. Should have experience in the conduct of clinical investigations in a developing country setting and will require an in-depth knowledge of FDA regulations regarding the phased clinical testing of new drugs and vaccines. Will be the primary liaison for U.S. Agency for International Development with various organizations concerned with malaria vaccine clinical/field trials, including WHO, PAHO, FDA, and others. Field experience with human malaria is required. Submit complete résumé and three references to: **The American Institute of Biological Sciences, 1800 North Kent Street, number 930, Arlington, Virginia 22209.**

ENVIRONMENTAL BIOTECHNOLOGIST—ECOLOGIST

Opening for tenure-track position in ecology of bio-engineered species within the Institute of Ecology and an appropriate department. Candidate must have Ph.D., research and teaching experience in ecology of introduced species, microbial ecology, ecological invasions, or a similar specialty. Demonstrated ability to work with interdisciplinary teams is desirable. Rank and salary negotiable. Send applications and letters of recommendation to: **Frank Golley, Chairman of the Search Committee, Institute of Ecology, University of Georgia, Athens, GA 30602. Applications will be reviewed 1 July 1986, or until a suitable candidate is found. An Equal Opportunity/Affirmative Action Institution.**

POSITIONS OPEN

DIRECTOR OF BIOCHEMICAL ENGINEERING

Applications are invited for the position of director of the Center for Biochemical Engineering at the Duke University School of Engineering. Five faculty members currently hold appointments in the center, and a 3500-square-foot laboratory is under construction. The director will be responsible for developing new research areas and degree programs in biochemical engineering, recruiting faculty, and developing resources. Candidates should have demonstrated research and leadership ability. Please submit curriculum vitae along with the names and addresses of five references to:

**Charles E. Putnam, M.D.
Vice-Chancellor for Health Affairs and
Chairman, Search Committee
Vice Provost, Duke University
Box 3808
Duke University Medical Center
Durham, North Carolina 27710**

Duke University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITIONS: The Biophysics Institute at Boston University School of Medicine has faculty positions available at the junior and senior levels. Applicants should have experience in one of the following areas: (i) molecular biology, (ii) cell biology, and (iii) structural biology, together with a strong interest in applying these approaches to lipids, lipoproteins, and membranes. Start-up funds will be available at the junior faculty level. Please send curriculum vitae, bibliography, and three letters of reference to: **Dr. G. Graham Shipley, Biophysics Faculty Search Committee, Boston University School of Medicine, 80 East Concord Street, Boston, MA 02118. An Equal Opportunity/Affirmative Action Employer.**

UNIVERSITY OF HAMBURG FEDERAL REPUBLIC OF GERMANY THE DEPARTMENT OF GEOSCIENCES METEOROLOGICAL INSTITUTE—invites applications for the position of Full Professor (C 4 German standard)

Responsibilities: Research and teaching in the field of general meteorology. Research experience is required in at least one of the following topics: physical processes in the atmospheric boundary layer, convection, clouds and radiation.

Experience in the coordination of research projects and in the acquisition of research grants expected.

The position involves active participation in the Special Research Area (Sonderforschungsbereich): "Climate-Relevant Processes in the Ocean-Atmosphere-Cryosphere System". The close cooperation with other institutions is to be continued. Specifically the applicant will be considered for membership of the Max-Planck-Society and Co-director of the Max-Planck-Institute of Meteorology, Hamburg.

Teaching requirements: 8 hours per week per semester.

Qualifications: In accordance with § 15 of Hamburg University Statutes (Hamburgisches Hochschulgesetz).

Starting Date: 1 October 1986.

Application Closing Date: 30 June 1986.

Contact: Application with curriculum vitae, list of publications and so forth, should be addressed to:

**The President of the University of Hamburg
Verwaltung/Personalreferat
Moorweidenstr. 18**

2000 Hamburg 13, Federal Republic of Germany
University of Hamburg is an Equal Opportunity Employer and encourages women candidates to apply.

POSTDOCTORAL POSITION available to study lipid-protein interactions, transfer of lipids between membranes and proteins, and enzymatic processes using NMR spectroscopy of different nuclei and 2D-NMR methods. NMR experience is preferred. Please send curriculum vitae, bibliography, and three letters of reference to: **Dr. James A. Hamilton, Biophysics Institute, Boston University School of Medicine, 80 East Concord Street, Boston, MA 02118. An Equal Opportunity/Affirmative Action Employer.**

Abbott Laboratories is a \$3.5 billion international leader in the health care products industry. As we continue our aggressive research projects, we're seeking individuals for the following positions:

HYBRIDOMA TECHNOLOGY

Abbott's world leading Diagnostics Division is creating changes throughout the health care field, setting the pace with advancement that goes beyond progressive to the newsbreaking.

This research position will be involved in the development of monoclonal antibodies for immunoassay products. Conceptualization and planning of research projects and supervision of other scientists are included in this bench level post. We require a Ph.D. in immunology or cell biology, preferably followed by postdoctoral work. Extensive hands-on experience in hybridoma technology is necessary, and experience producing monoclonal antibodies to haptens/peptides or carbohydrates would be desirable. **Reply to Dept. HT.**

ASSISTANT PROTEIN CRYSTALLOGRAPHER

The Pharmaceutical Products Division continues its tradition of innovation through excellence. Our Protein Crystallography Lab, investigating the structures of a wide variety of macromolecules, is equipped with rotating anode X-ray generators, diffractometers and an area detector. Ample computing and macromolecular graphics capabilities are also utilized. The Assistant Protein Crystallographer will assist in one or more of the following areas:

- Protein crystallization including protein purification, concentration and analytical procedures.
- Crystal screening and data collection using diffractometer and area detector methodologies.
- Data processing and analysis.
- Maintenance of laboratory equipment.

Qualifications include an M.Sc. or equivalent research experience in protein crystallography or protein chemistry, and a strong background in physical biochemistry. **Reply to Dept. APC.**

In addition to a superior scientific environment, Abbott offers excellent salary and benefits including stock retirement and profit sharing plan. We are headquartered in an attractive suburban community just 30 miles north of Chicago on the Lake Michigan shoreline. For confidential consideration, please send your resume, indicating appropriate department number, to: **Sue Hart-Wadley/Corporate Placement.** Abbott is an Affirmative Action Employer.

ABBOTT
ABBOTT PARK IL 60064

"HEALTH CARE WORLDWIDE"

SENIOR PROJECT DEVELOPMENTAL BIOLOGIST

Merck Sharp & Dohme, a recognized leader in the pharmaceutical industry, has an excellent career opportunity available in the Biological Quality Control Technical Services area.

Candidate must possess a Ph.D. in Microbiology, Biochemistry, or Molecular Biology, or the equivalent, plus 1-5 years experience. Areas of expertise should include: immunoassays, protein chemistry, molecular biology and microbiology. Working experience in immunoassay methodology, DNA hybridization and recombinant DNA technology preferred. Duties include leading a group concerned with development of new assay methodologies for biological products, improvement of existing procedures, as well as technical assistance to other departments relative to process control and validation. Position includes close contact with the basic research area.

Stimulating and rewarding assignments, excellent salary, a comprehensive benefits package plus the opportunity for professional growth. Send complete resume with salary requirements to:

Thomas D. McQuarrie

MERCK SHARP & DOHME

MSD
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Division of Merck & Co., Inc.

West Point, PA 19486

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AUSTRALIA CSIRO

RESEARCH FELLOW TURBULENT TRANSPORT AND DISPERSION A\$27,475-A\$40,410 DIVISION OF ATMOSPHERIC RESEARCH ASPENDALE, VIC

GENERAL: The Division of Atmospheric Research has a staff of 130 including 70 professional scientists and undertakes research into physical and chemical aspects of atmospheric phenomena and related areas. As part of the Small Scale Dynamics program, the Division is actively involved in theoretical, numerical, laboratory and field aspects of research into atmospheric transport and turbulent diffusion. Facilities available in the Division include a wind tunnel, a geophysical fluid dynamics laboratory, lidar remote sensing, and an excellent computing service.

DUTIES: In collaboration with senior scientists in the Small Scale Dynamics Section to undertake research in the general area of turbulent transport and dispersion in the atmospheric boundary layer. Depending on the skills of the successful applicant this research may focus on theoretical, laboratory or field aspects of the problem.

QUALIFICATIONS: A PhD degree or equivalent qualifications in physics, mathematics or engineering. Experience in fluid mechanics especially turbulence, is desirable.

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

APPLICATIONS: Stating relevant personal particulars, including details of qualifications and experience, the names of at least two professional referees and quoting reference No A1869, should be directed to:

The Chief
CSIRO Division of Atmospheric Research
Private Bag No 1
MORDIALLOC VIC 3195
AUSTRALIA

by June 13, 1986.

CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

MEDICAL COLLEGE OF GEORGIA DIRECTOR OFFICE OF GRANTS AND CONTRACTS AND EXECUTIVE DIRECTOR MEDICAL COLLEGE OF GEORGIA RESEARCH INSTITUTE

The director of the Office of Grants and Contracts of the Medical College of Georgia and the executive director of the MCG Research Institute is a vital link between faculty and administration in the promotion of research at the Medical College of Georgia, the Health Sciences Center of the State of Georgia. The position, available 1 September 1986, involves administration of grants and contracts from federal, state, private agencies, and industry; administration of institutional grant programs, technology transfer, developing workshops for young investigators in the Schools of Medicine, Dentistry, Allied Health Sciences, and Nursing, and working with the directors of the Offices of Research Support Services and Research Computing and Statistics. The Director reports to the vice president of research and interacts with the Board of Directors of the Research Institute. The director should have an advanced degree, preferably in a biomedical science, and administrative and leadership experience in the area of grants and contracts. Salary is commensurate with experience. Curriculum vitae and three references should be sent before 30 June to:

Lowell M. Greenbaum, Ph.D.
Vice President for Research
Medical College of Georgia
Augusta, GA 30912.

Equal Opportunity/Affirmative Action Program.

FACULTY POSITION

Department of Pharmaceutical Sciences, University of Arizona, invites applications for a tenure-track position at the assistant professor level, available January 1987. We seek an investigator who can apply modern biotechnology to the design and synthesis of drugs or studies on their mode of action. Possible areas include, but are not limited to NMR, molecular mechanics/graphics, drug-receptor binding, biopolymer structure and function, and monoclonal antibodies. Teaching responsibilities include undergraduate and graduate level courses in medicinal chemistry. Send curriculum vitae and three letters of recommendation to: **Dr. William A. Remers, Chairman, Search Committee, Department of Pharmaceutical Sciences, College of Pharmacy, University of Arizona, Tucson, Arizona 85721. An Affirmative Action/Equal Opportunity Employer.**

FISH BIOLOGIST. The University of Texas Marine Science Institute in Port Aransas has an opening for a State-funded **RESEARCH SCIENTIST IN: Fish Biology.** Preference will be given to candidates competent in the use of modern experimental techniques to study marine fishes in both the field and laboratory. Candidates must have a Ph.D. degree and a record of research accomplishments in one of the following areas: ecology, physiology, biochemistry, or genetics. Successful applicants are expected to obtain extramural funding to develop an independent research program and to cooperate in development of multidisciplinary projects involving fishes from the local estuarine and continental shelf environments. Postdoctoral experience is preferred.

Send letter of application, statement of research interests, curriculum vitae, and names of three references before 15 July 1986 to: **Dr. Robert S. Jones, Director, Marine Science Institute, The University of Texas at Austin, Port Aransas, Texas 78373.**

The University of Texas at Austin is an Equal Opportunity/Affirmative Action Employer.

LECTURESHIPS. Teaching positions in histology, neurobiology, physiology, embryology, and small and large animal anatomy. Appointments are for up to 80 percent time instruction. Full-time positions are available for those wishing to participate in research in one of the above disciplines. The Ph.D. and/or D.V.M. degree and teaching experience are required. Send curriculum vitae and three letters of reference to: **Dr. Gerald E. Bisgard, Department of Comparative Biosciences, School of Veterinary Medicine, University of Wisconsin, Madison, Wisconsin 53706.** Deadline: 30 June 1986, or until filled.

Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

ENVIRONMENTAL SCIENTIST

A midwest specialty chemical manufacturer (non-petrochemical) with approximately \$135MM sales seeks an experienced environmental scientist to develop and implement FIFRA, FDA, and USDA regulatory programs.

Qualifications include a degree in chemical engineering, chemistry, or toxicology and a minimum 5 years of experience in the chemical industry or with a regulatory agency. Advanced degree and previous product registration background are preferred.

We offer competitive salary and excellent benefits. To apply, submit résumé and salary requirements to:

SHEREX CHEMICAL COMPANY, INC.

E. R. Senter, Employment Office

P.O. Box 646

Dublin, Ohio 43017

Equal Opportunity Employer

FACULTY POSITION, DEPARTMENT OF NEUROSURGERY, tenure-track. Individual sought to spearhead basic and clinical research group in one of the following areas: neural regulation of cerebral circulation; neural transplantation; neural plasticity. Excellent possibilities for collaboration with groups using chemical neuroanatomy, cellular biophysics and neurophysiology, image analysis, ultrastructural, molecular and culture techniques. Successful candidate will have experience with cellular, molecular, and morphological approaches, and ability to attract outside funding. Send curriculum vitae, statement of research background/goals, and names of four references to: **John M. Tew, Jr., M.D., Chairman Neurobiology Search, Department of Neurosurgery, University of Cincinnati College of Medicine, ML 515, Cincinnati, OH 45267-0515. The University of Cincinnati College of Medicine is an Affirmative Action/Equal Employment Opportunity Employer.**

MOLECULAR BIOLOGIST: The Hypertension Research Laboratory of the San Diego VA Medical Center (VAMC) seeks a molecular biologist/research biochemist (GS-11) to investigate the molecular biology/recombinant DNA of endocrine peptides known as chromogranins. We are a large, active biochemical laboratory on campus at the University of California, San Diego (UCSD), with joint UCSD appointments. The position will involve a UCSD research faculty series appointment. The applicant will spearhead our recombinant DNA studies of a group of peptides stored and released with virtually all other peptide hormones. Candidates should possess the Ph.D. degree, with extensive recombinant DNA experience, and postdoctoral experience is also desirable. The applicant must meet civil service requirements at the GS-11 level, with opportunity for independence and advancement, as well as limited civil service benefits. The position will commence in June through July, 1986. *Affirmative Action/Equal Opportunity Employer.* Please send curriculum vitae and names of two references by 15 June to: **Dr. Daniel O'Connor (Associate Professor of Medicine, UCSD, Chief of Hypertension, VAMC), Nephrology Division, V-111-H, VA Medical Center, 3350 La Jolla Village Drive, San Diego, CA 92161. Telephone 619-453-7500, extension 3826.**

NEPHROLOGIST/INVESTIGATOR—Wayne State University invites applications for a position on the tenure track in nephrology. The position requires commitment to research, teaching, and patient care. Candidates should display strong academic credentials, be Board-certified in internal medicine preferably in nephrology, and demonstrate ongoing research expertise, productivity, and preferably independent funding. Responsibilities will include pursuit of personal research project(s), coordinating research activities of the Division of Nephrology, and supervision of research fellows. We encourage applicants with research interest in renal biochemistry in areas of adenine nucleotides, membrane enzymology, lipid metabolism, receptors, or cellular handling to interface with present research staff. Current projects include cellular mechanisms of acute renal failure, vasopressin release, renal hemodynamic responses to endogenous hormones, renin release, and trace element metabolism in chronic renal failure. Those interested may contact: **F. D. McDonald, M.D., at telephone: 313-494-7341 or 4707 St. Antoine, Detroit, Michigan 48201. Wayne State University is an Equal Opportunity and Affirmative Action Employer.**

POSITIONS OPEN

FACULTY POSITION, CHEMISTRY DEPARTMENT, WAYNE STATE UNIVERSITY, MOLECULAR BIOLOGY/BIOCHEMISTRY. The Chemistry Department is seeking a faculty member with research interests in molecular biology. This person would complement an active biochemistry group within the Chemistry Department and interact with researchers campus-wide through the Molecular Biology Center. Professional rank is open. Applicants should respond to: **Richard L. Lintvedt, Chairman, Chemistry Department, 123 Chemistry, Wayne State University, Detroit, MI 48202. WSU is an Equal Opportunity/Affirmative Action Employer and actively seeks applications from women and minority groups.**

FACULTY POSITION—IMMUNOLOGIST

The Department of Pathology and Laboratory Medicine at Emory University invites applications for a tenured or tenure-track faculty position in immunology at the rank of assistant or associate professor. Candidates are expected to assist in the development of a program in autoimmunity, especially as it relates to mechanisms of viral induced myocarditis and cardiomyopathy in both human and experimental models. Applicants should have at least 2 years of postdoctoral experience and have demonstrated research ability in modern immunology. The successful candidate, while assisting the development of an independent research program, will be expected to compete successfully for external funding and participate in teaching immunopathology to graduate and undergraduate students. Rank and salary will be commensurate with experience. Send curriculum vitae, a statement of research plans, and three letters of recommendation to: **Kenneth W. Sell, M.D., Ph.D., Chairman, Department of Pathology, Room 703 WMB, Emory University School of Medicine, Atlanta, GA 30322. An Affirmative Action/Equal Opportunity Employer.**

OLD DOMINION UNIVERSITY

IMMUNOLOGIST: Tenure-track position at the assistant professor level for fall 1986. Applicants should have a Ph.D. with postdoctoral research experience desired in basic and/or clinical immunology and demonstrated interests in hybridoma technology or reproductive biology. Integrative research collaboration with faculty in an In-Vitro Fertilization Program and Andrology Laboratory are available. Teaching responsibilities include introductory courses in immunology and pathophysiology, with optional development of courses in candidate's area of specialization. Send curriculum vitae, summaries of current and proposed research, and names of three references by 13 June 1986 to: **Dr. Harold G. Marshall, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23508. Old Dominion University is an Affirmative Action/Equal Opportunity Employer.**

NEUROIMMUNOLOGY / NEUROVIROLOGY / MOLECULAR NEUROBIOLOGY. Junior and intermediate faculty positions in a new, privately endowed institute for basic research in gerontology. Located in Phoenix, Arizona. For particulars, send curriculum vitae and research goals to: **Dr. Joseph Rogers, Director, Institute for Biogerontology Research, P.O. Box 1278, Sun City, AZ 85372.**

NUTRITION SCIENTIST/EPIDEMIOLOGIST. Ph.D. or comparable level academic background. Knowledge of current research and literature regarding diet and cancer prevention. Part-time consulting may develop into full-time with Maryland consulting firm in the Rockville-Bethesda area. For immediate consideration, please respond to: **G. Sparer, Technassociates, Inc., 1700 Rockville Pike, Suite 200, Rockville, MD 20852; telephone: 301-468-6191.**

POSTDOCTORAL POSITION available immediately to study biochemistry, molecular biology, and regulation of expression of murine Qa/TL region class I alloantigens. Applicants should have experience in recombinant DNA and/or molecular biochemistry techniques. Send curriculum vitae and three letters of reference to: **Richard G. Cook, Ph.D., Howard Hughes Medical Institute, Department of Microbiology and Immunology, Baylor College of Medicine, Houston, Texas 77030.**

Pharmacologist

Gastrointestinal Immunology/ Immunopharmacology

Smith Kline & French Laboratories, a leader in pharmaceutical research, is seeking a Pharmacologist to fill a challenging position in its Pharmacology Department located in suburban Philadelphia, Pennsylvania.

The successful candidate will:

- establish and maintain a research program in the pharmacology, pathophysiology and immunology of inflammatory bowel disease (IBD).
- develop techniques to screen compounds for potential therapeutic utility in IBD.
- interact and collaborate with other SK&F research efforts to promote and facilitate the drug discovery process for IBD and other immunologic disorders.
- publish results in peer-reviewed journals and present research at national scientific meetings.
- prepare written and oral reports for in-house review of IBD research and drug discovery effort.

Candidates are required to have:

- a Ph.D. in Pharmacology, Physiology or Biochemistry with emphasis on immunology preferred.
- 1-3 years of postdoctoral research in GI immunology or immunopharmacology.
- a record of publications commensurate with postdoctoral experience and a demonstrated ability to maintain an active research laboratory.
- excellent oral and written communication skills.

Preference will be given to those with previous supervisory experience.

We offer an excellent benefits and compensation program including an attractive relocation package. For confidential consideration, send your C.V. and names of three references to George P. Kissell, Manager, Personnel Relations, SmithKline Beckman Corporation, 1556 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

SK&F
A SmithKline Beckman Company

SENIOR SCIENTIST CARDIOVASCULAR PHARMACOLOGY

The Sterling-Winthrop Research Institute, the research division of Sterling Drug Inc., announces an opening for a senior level scientist in its Pharmacology Department.

The successful candidate should have a PhD in Cardiovascular Pharmacology/Physiology and 1-2 years post doctoral experience working with multiple models of hypertension. This position will involve multidisciplinary group interactions in the development of new approaches for antihypertensives. A broad background in the use of *in vivo* modelling is essential to this position. Demonstrated oral and written communication skills are essential.

We offer an attractive salary and benefits package with the opportunity for professional growth. The Institute is located near Albany, NY which is a center for summer and winter recreational activities.

Please send CV including salary requirements in confidence to:

Nancy E. Laranjo,
Employee Relations Administrator



**STERLING-WINTHROP
RESEARCH INSTITUTE**

A Division of Sterling Drug Inc.
Columbia Turnpike, Rensselaer, NY 12144
Equal Opportunity Employer M/F/H/V

Pharmacology

Squibb is recognized as an international leader in research and the development of pharmaceuticals and related health care products. Due to our expanded growth, we currently have exceptional opportunities for qualified individuals to join our Pharmacology Department in the following capacities:

(1.) Eicosanoid Research— Senior Biochemist

Candidates should possess a Ph.D. in Biochemistry or a related field with 5-8 years postdoctoral scientific experience and with a working knowledge of eicosanoid biochemistry. The successful candidate will be studying the effects of novel compounds and known drugs on isolated enzymes or enzyme pathways, especially those involved in the biosynthesis of arachidonic acid metabolites, such as leukotrienes. Responsibilities will include preparation, characterization, and use of enzyme systems as well as development of analytical techniques for separation and quantitation of arachidonic acid metabolites. This individual will work with pharmacologists and chemists in collaborative programs directed towards the development of novel therapeutic agents.

(2.) Ligand Binding Studies— Pharmacologist or Biochemist

This position requires candidates to have a BS or MS in Biological Science and 1-3 years experience in radioligand binding techniques. Responsibilities include assisting in the performance of pharmacological studies involving various *in vitro* techniques such as radioligand receptor binding and enzyme activity assays, preparing animal tissue samples for membrane component purification, maintaining cell cultures and preparing purified subcellular fractions for pharmacological and biochemical experimentation.

(3.) Cardiovascular Experimentation— Pharmacologists or Physiologists

Candidates should possess a BS or MS in the Biological Sciences and 1-3 years experience in the areas of cardiovascular or renal pharmacology or physiology. Experimentation with anesthetized and conscious animal preparation required and experience in the areas of atrial natriuretic factor, the renin-angiotensin system or experimental hypertension desirable.

All positions are located at the Squibb Institute for Medical Research in Princeton, NJ, a pleasant semi-rural setting convenient to both Philadelphia and New York City.

For confidential consideration, please indicate which position you desire by number indicated and submit your resume to: **The Squibb Institute for Medical Research, Human Resources Dept. REW, P.O. Box 4000, Princeton, NJ 08540.** An equal opportunity employer.



SQUIBB

Where science comes to life.

POSITIONS OPEN

MOLECULAR BIOLOGIST: Tenure-track position, assistant professor, starting August 1986. Ph.D. degree with teaching and research experience in recombinant DNA and hybridoma technology. Prefer applicants with related postdoctoral experience. Successful candidate will direct undergraduate program in biotechnology, teach courses related to the program, and supervise undergraduate research. Salary competitive. Applications close 30 June 1986. Submit résumé, three letters of reference, and official transcripts to: **Dr. Marion Kayhart, Chairperson, Department of Biology, Cedar Crest College, 30 and Walnut Streets, Allentown, PA 18104. Equal Opportunity Employer.**

POSITIONS IN THE NEUROSCIENCE PROGRAM THE OHIO STATE UNIVERSITY COLLEGE OF MEDICINE

Applications are invited for tenure-track positions at the **Assistant or Associate Professor** level in the clinical and basic science components of an expanding interdisciplinary neuroscience program.

BASIC NEUROSCIENTIST

This position requires research expertise in cellular-molecular biology of neurons or biophysics of excitable or receptor-mediated membrane functions. The successful applicant will be expected to maintain a nationally competitive research program and to participate in the development of educational programs in neuroscience. Candidates should have an M.D., Ph.D. or equivalent, and a minimum of 2 years of postdoctoral training. Preference will be given to candidates with funded research in progress. A tenure-track appointment will be in the Department of Anatomy, Pharmacology, Physiology, or Physiological Chemistry, depending upon the area of competence of the appointee.

CLINICAL NEUROSCIENTIST

This position is track of tenure and requires a neuroscientist with clinical training for primary or joint appointment in a clinical or basic science department or division. The M.D. degree and clinical qualifications in a specialty area are required. Research interest in neuropharmacology, genetics, or molecular biology is desirable; however, any area of investigative neuroscience will be considered. Applications including curriculum vitae and 3 to 5 references should be mailed to: **Dr. James S. King, Neuroscience Program, Department of Anatomy, 4066 Graves Hall, 333 West 10 Avenue, The Ohio State University, Columbus, Ohio 43210, by 1 August 1986. The Ohio State University is an Equal Opportunity/Affirmative Action Employer.**

PATHOLOGY CHAIRPERSON

The University of California, Irvine, is seeking applicants for the position of professor and chairperson of the Department of Pathology. The department is actively engaged in research, education, and service. The successful candidate will be director of pathology at the University of California, Irvine Medical Center and in charge of the academic programs at affiliated institutions. The position requires strong academic and administrative skills. Applicants should include a complete curriculum vitae and names and addresses of at least five references. *The University of California, Irvine is an Equal Opportunity/Affirmative Action Employer.* Please send applications to:

Richard M. Friedenber, M.D.
Chairman, Pathology Search Committee
University of California, Irvine Medical Center
Department of Radiological Services (Route 140)
101 City Drive South
Orange, CA 92668

POSTDOCTORAL FELLOW (with potential for further advancement), to perform research in the field of granulocyte metabolism and physiology. Ph.D. or equivalent degree required; background in cell biology, membrane biochemistry, and/or immunology desirable. Available immediately. Salary commensurate with qualifications and experience. Send résumé with names and addresses of three references to: **Dr. Michael J. Chusid, Department of Pediatrics, Medical College of Wisconsin, 1700 West Wisconsin Avenue, P.O. Box 1997, Milwaukee, WI 53201; telephone: 414-933-4295. An Equal Opportunity/Affirmative Action Employer, M/F/H.**

POSITIONS OPEN

POSTDOCTORAL ASSOCIATE

We are seeking an individual with a Ph.D. to be a part of an ongoing research project to investigate the effects of chemical carcinogens on gene expression, amplification, and protooncogene activation using animal models. Candidates should have experience in biochemistry and/or molecular biology.

Please send curriculum vitae and the names of three references to:

Professor Gerald N. Wogan
Department of Applied Biological Sciences
Massachusetts Institute of Technology
77 Massachusetts Avenue (16-333)
Cambridge, MA 02139

MIT is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION for the study of molecular mechanisms of antiviral agents is available now for an individual with expertise in the replication of RNA viruses. Candidate will interact with a team involved in immunological, pharmacokinetic, and viral studies on drug delivery systems and efficacy. Salary \$18,000 to \$20,000. Send curriculum vitae and names of three references to: **Dr. Brian E. Gilbert, Department of Microbiology and Immunology, Baylor College of Medicine, Houston, TX 77030.**

A POSTDOCTORAL POSITION is available starting June 1986, for 2 years to study the hormonal control of differentiation of teratoma cell lines at the cellular and molecular levels. Work will involve protein purification and DNA recombinant technologies. Experience in molecular biology or protein chemistry preferred. Candidates should send a copy of curriculum vitae and names of three references to:

Andrea L. Terwilliger
Personnel Manager
W. ALTON JONES CELL SCIENCE CENTER
10 Old Barn Road
Lake Placid, New York 12946

An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION/ENDOCRINOLOGY: Postdoctoral fellowship position available immediately for Ph.D. to do basic research focused on gonadotropin interaction within target cell. Candidate should have background in biochemical and cell fractionation techniques and be able to carry out independent research. Send curriculum vitae to: **Dr. Jon Pehrson, Department of Endocrinology, Boston University School of Medicine, 818 Harrison Avenue, Boston, MA 02118. Equal Opportunity Employer, M/F.**

RESEARCH ASSISTANT PROFESSOR to complement research program on Auxin regulated gene expression. Individual in position will be expected to direct a research program and seek research support from federal and private agencies. Training and expertise should be in molecular techniques, molecular cloning, and DNA sequencing relative to plant systems. A Ph.D. in an appropriate field of plant science is required. Send curriculum vitae, description of research plans, and names of three references by 15 June 1986.

Search—**RAP, Thomas J. Guilfoyle, 117 Schweitzer Hall, University of Missouri, Columbia, MO 65211. The University of Missouri is an Equal Opportunity/Affirmative Action Institution.**

UNIVERSITY OF ALBERTA DEPARTMENT OF GENETICS SESSIONAL APPOINTMENT

Applications are invited for a sessional appointment (full-time, temporary) 1 September 1986 to 30 April 1987, to teach population genetics and/or human genetics, with some adjustment possible to fit the interests of the appointee. Candidates should have a Ph.D. and experience appropriate to the teaching involved. Salary from \$22,000 (for eight months), depending on experience. A removal grant is available.

Applications, including curriculum vitae with the names of three referees should be sent to: **David Nash, Chairman, Department of Genetics, University of Alberta, Edmonton, Alberta, Canada T6G 2E9.** Closing date for applications is 4 July.

The University is an Equal Opportunity Employer, but in accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study the regulation and function of intermediate filament proteins in *Xenopus* embryos using monoclonal antibodies and molecular methods. Experience in either developmental biology, DNA methods, or protein biochemistry preferred, but not required. Send curriculum vitae and three references to: **Dr. Michael W. Klykowsky, Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder, Boulder, CO 80309—0347. The University of Colorado, 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.**

POSTDOCTORAL POSITION available immediately for studies on bilirubin toxicity and metabolism. Ph.D. in chemistry or biochemistry with experience in HPLC, TLC, and spectroscopy required. Studies will involve isolation and characterization of pyrrole pigment derivatives, extensive use of HPLC, and in vivo experiments in rats. Send curriculum vitae and three reference letters to: **Dr. A.F. McDonagh, Box 0538, University of California, San Francisco, CA 94143. The University of California is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.**

POSTDOCTORAL POSITIONS AVAILABLE for multidisciplinary studies concerning nicotinic acetylcholine receptor structural and functional heterogeneity or genetic and epigenetic mechanisms of human neuronal/glial differentiation in vitro. Investigations are to encompass protein biochemical, immunological, pharmacological, cell culture, molecular biological, and electrophysiological (single channel) approaches in a unique and dynamic neuroscientific setting. Send curriculum vitae, names and addresses of three references, and a brief statement of research experience and objectives to: **R.J. Lukas, Division of Neurobiology, Barrow Neurological Institute, 350 West Thomas Road, Phoenix, AZ 85013. Equal Opportunity Employer.**

POSTDOCTORAL POSITION, HUMAN GENETICS. Available immediately to study the molecular genetics and regulation of the human arginase gene loci in normal man and in patients with deficiency of liver arginase. Familiarity with the techniques of molecular genetics required. Salary is competitive and funding is stable. Send curriculum vitae and three references to: **Stephen Cederbaum, M.D., UCLA Mental Retardation Research Center, 760 Westwood Plaza, Los Angeles, CA 90024; telephone: 213-825-0402. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately in developmental neurobiology. Studies involve mechanisms underlying response of immature CNS neurons to injury and plasticity and regeneration in the developing spinal cord. Stipend consistent with NIH guidelines. Send curriculum vitae, statement of research interests, and names and addresses of three references to: **Dr. Barbara S. Bregman, Department of Anatomy, University of Maryland School of Medicine, 655 West Baltimore Street, Baltimore, MD 21201.**

AGRIGENETICS ADVANCED SCIENCE COMPANY

The Research Laboratory of Agrigenetics Advanced Science Company at Madison, Wisconsin, has an opening for a **POSTDOCTORAL RESEARCH SCIENTIST** (Ph.D. level) or experienced research associate (B.S. or M.S. level) with interest and experience in developing and performing immunoassays to detect various types of antigens from viruses, microorganisms, or plants in transformed plants. Experience with purification and chemical modification of antibodies for use in diagnostic assays is required. The position will be in an existing monoclonal antibody facility, and will be part of a multidisciplinary group exploiting various aspects of plant biotechnology. The salary will be commensurate with qualifications and experience. Send résumé and names of three references by 16 June 1986 to:

Dr. John Ingle, Director
Agrigenetics Advanced Science Company
5649 East Buckeye Road
Box A
Madison, WI 53716

POSITIONS OPEN

DEVELOPMENTAL CNS PHARMACOLOGY/TOXICOLOGY

POSTDOCTORAL/RESEARCH ASSOCIATE positions (1 to 2) to be available with 1 to 4 months to study neuropsychopharmacology and neurobehavioral toxicology of exposure to drugs, drug withdrawal, or undernutrition during development. The successful candidate should have training or evidence of expertise (relevant publications or submitted manuscripts) in either developmental psychobiology, psychoneuroendocrinology, or neurochemistry. He/she will join a laboratory group which is studying effects of early manipulation (perinatal) upon neurobehavioral function later in life. Experimental methods to be employed include computer-controlled environments for the assessment of cognitive and operant behavioral effects of drugs and neurotoxins, HPLC analysis of brain tissue or brain perfusate, sensitivity to hyperthermia-induced convulsions, and reactivity of the neuroendocrine axis to stress. Send curriculum vitae and the names of three references to **S. B. SPARBER, Ph.D., University of Minnesota Medical School, Department of Pharmacology, 3-260 Millard Hall, 435 Delaware Street, SE, Minneapolis, Minnesota 55455.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

REPRODUCTIVE PHYSIOLOGIST

Seeks reproductive physiologist, salary range \$44,430 to \$57,759 per year, with advanced degree in physiology and 5 years of professional experience to be responsible for a program involving the study of reproduction and endocrinology of captive wildlife species. Candidate oversees studies on endocrinological function of zoological species, the effects of captivity on reproductive function, biological prerequisites to improve captive breeding, preservation of gametic or embryonic material, and techniques for embryo transfer. Candidates must have experience in laboratory and field research involving animals of diverse taxonomic representation. Evidence of a multidisciplinary research approach and the ability to publish in peer-reviewed scientific literature is essential. Submit by 13 June 1986, SF-171 (personal qualification statement), curriculum vitae, copies of publication, and letters of reference to:

Employment Office
Smithsonian Institution
Washington, DC 20560
Attention: MPA-86-245-F
An Equal Opportunity Employer



Wayne State University

RESEARCH ASSISTANT PROFESSOR positions available 1 June 1986 to study the mechanism of action of a unique tumor procoagulant and its role in metastasis. Individual would join an interdisciplinary cancer research group focusing on the mechanisms by which tumor cells metastasize with emphasis on possible therapeutic interventions. This work is funded by the National Cancer Institute and American Cancer Society. Experience in either protein purification or gene cloning mandatory; knowledge of platelet or coagulation protein biochemistry desirable. Ph.D. in biochemistry, cell biology, or related field required. Salary range \$20,000 to \$23,000 (plus fringes) commensurate with experience. Send curriculum vitae and three letters of recommendation to: **Dr. Kenneth V. Honn, Department of Radiation Oncology, 210 Science Hall, Wayne State University, Detroit, Michigan 48202.** *Wayne State University is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH SCIENTIST

The Division of Biomedical Research of the Lovelace Medical Foundation has a staff opening for a molecular immunologist, Ph.D., to participate in ongoing studies in immunoregulation. Interest and experience with human monoclonal antibodies or autoimmune diseases desirable. If qualified, please send résumé to: **Lovelace Medical Center, Human Resources Department, 5400 Gibson, S.E., Albuquerque, NM 87108.** *Equal Employment/Affirmative Action Employer, M/F/V/H.*

POSITIONS OPEN

POSTDOCTORAL POSITION available to conduct research on the molecular biology of the catalyst of neutral lipid (sterol esters, triglycerides) movement. Suitable candidates will have experience in molecular genetics in yeast and/or mammalian systems. Conceptual understanding of protein structure/function is also important. Salary will be commensurate with experience. The position may be developed into a faculty position. The University of Cincinnati has strong programs in lipid metabolism in the basic science and clinical departments. Applications, with curriculum vitae and the names of three references, should be directed to:

J. A. K. Harmony, Director
Division of Lipoprotein Research
Department of Pharmacology and Cell Biophysics
College of Medicine
University of Cincinnati
Cincinnati, Ohio 45267-0575

POSITIONS OPEN

POSTDOCTORAL POSITION available July 1986, for molecular investigation of an endogenous human retrovirus isolated from human teratocarcinoma cells. Candidates should have a strong background in recombinant DNA techniques including: cloning, DNA sequencing, and mRNA isolation and analysis. Send curriculum vitae and names of three references to: **Personnel Manager, Southwest Foundation for Biomedical Research, P. O. Box 28147, San Antonio, Texas 78284.** *Equal Opportunity Employer, M/F.*

POSTDOCTORAL RESEARCH ASSOCIATE available immediately for 2 years in the area of molecular biology with emphasis on recombinant DNA techniques. Project involves genetic engineering of rhizobia via transposon mutagenesis and gene cloning techniques. Send curriculum vitae and three letters of recommendation to: **Dr. Don P. Bourque, Department of Biochemistry, University of Arizona; telephone: 602-621-7529.**

DIRECTOR OF R&D: CANCER/ONCOGENES

The establishment of a long term Joint Venture with one of the world's largest chemical corporations, has created an opening for a top-level scientific directorship at Applied bioTechnology. The responsibilities in this position include: providing excellence in scientific and managerial leadership to the existing professional staff; the planning and effective implementation of a substantial expansion for this endeavor; and most importantly the development of high quality, novel products for diagnostic and therapeutic applications of the company's proprietary oncogene technology. Located in Cambridge, MA the company has a number of active collaborations with several prestigious academic institutions. The individual we are seeking will also be responsible for managing the liaison activities with these institutions as well as play a key role in the overall management of the Joint Venture.

The company is seeking an experienced, highly qualified, active scientist, preferably with specific expertise in the analysis of gene structure and function in the molecular biology of cancer. Professional management skills and high personal energy which will enhance the current challenging and dynamic environment are also highly desirable qualities.

If you are qualified, please submit your c.v. with the names of three references and list of recent publications to: President, Applied bioTechnology, Inc., 80 Rogers Street, Cambridge, MA 02142. Information will be held in strict confidence.

An Equal Opportunity Employer

Applied bioTechnology, Inc.

POSITIONS OPEN

REPRODUCTIVE PHYSIOLOGIST/ EMBRYOLOGIST

In Vitro Fertilization Program requires a senior scientist (Ph.D.) or M.S. graduate, preferably with experience in human in vitro fertilization. Experience in related fields such as tissue culture will also be considered. Expertise in media preparation, oocyte and sperm handling, and embryo culture is desirable. The successful candidate will have varied responsibilities as the Director of the IVF Laboratory and must have demonstrated strong interpersonal and organizational skills. Salary will be negotiable and related to the experience of candidates. The IVF is being established by a reproductive endocrinologist in the southwest United States. Please forward curriculum vitae listing three references to: **SCIENCE, BOX 102.**

RESEARCH ASSOCIATE. Position available under 3-year NIH-sponsored research program investigating molecular basis of attenuation of human hepatitis A virus. Ph.D. or equivalent with experience in molecular biology. Experience in cDNA cloning, DNA transfection assays, and/or DNA sequencing would be helpful. Salary range \$19,000 to \$23,000 per year. Respond by 17 June to: **S.M. Lemon, M.D., Division of Infectious Diseases, 547 Burnett-Womack Building, University of North Carolina (UNC), School of Medicine, Chapel Hill, NC 27514; Telephone: 919-966-2536.** Include curriculum vitae and names of three references. *UNC-CH is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH SCIENTIST

Individual to direct ongoing research group investigating the effects of chemical carcinogens on gene expression using animal models. Candidates should have the necessary technical expertise in chemical carcinogenesis and molecular biology to be responsible for coordination of research involving graduate students, technicians, and junior-level postdoctoral associates. Qualifications should include a Ph.D. in molecular biology or biochemistry, 5 plus years of postdoctoral experience, a pertinent publication record, and research experience at an administrative level.

Please send curriculum vitae and the names of three references to:

**Professor Gerald N. Wogan
Department of Applied Biological Sciences
Massachusetts Institute of Technology
77 Massachusetts Avenue (16-333)
Cambridge, MA 02139**

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SCIENCE WRITER

Schlumberger, the world's leading geophysical well-logging company, is looking for a physicist who writes well to contribute to its quarterly journal, *The Technical Review*. The publication reviews Schlumberger's scientific and technical advances and circulates throughout the company and to Schlumberger clients. Applicants should have experience in physics research and in science writing or editing for a general scientific audience. Send writing samples, curriculum vitae, and salary history to: **Editor, The Technical Review, Schlumberger-Doll Research, Old Quarry Road, Ridgefield, CT 06877-4108.** *An Equal Opportunity Employer.*

SENIOR RESEARCH SCIENTIST IN ATHEROSCLEROSIS. The Department of Pathology is seeking an M.D./Ph.D. established in an area of basic research in atherosclerosis. This may include vessel wall-lipoprotein-macrophage interactions, molecular genetics of apolipoproteins, lipoprotein DNA polymorphisms, lipoprotein receptors, and so forth. The applicant should be able to develop an independent, major, nationally recognized program within the department within a few years. Within the Medical Center, there exists a strong core of scientists and programs in lipid-apolipoprotein metabolism and opportunities for collaboration are excellent. Appointment will be tenured or tenure track at the associate or full professor level and, optimally, effective in September 1986. Interested applicants should send a detailed curriculum vitae to: **Evan A. Stein, M.D., Ph.D., Department of Pathology, ML number 714, University of Cincinnati Medical Center, 234 Goodman Street, Cincinnati, OH 45267 or telephone: 513-872-5373.** *The University of Cincinnati is an Equal Opportunity Employer.*

POSITIONS OPEN

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW to join active program using novel model system in "lower" eukaryotes to study molecular basis of mammalian hormone action. Possibility to develop independent aspects of project to take away. Recent or expected Ph.D. in molecular or cell biology or biochemistry.

**John Lenard,
University of Medicine
and Dentistry of New Jersey
UMDNJ-Rutgers Medical School,
P.O. Box 101,
Piscataway, NJ 08854.
*UMDNJ is an Equal Opportunity/
Affirmative Action Employer***

SENIOR RESEARCH BIOLOGIST GM-14. The Rocky Mountain Forest and Range Experiment Station, U.S. Department of Agriculture (USDA) Forest Service, seeks a senior scientist to conduct research on effects of atmospheric deposition on alpine/subalpine terrestrial and aquatic ecosystems. Seek a plant ecologist, pathologist, and/or physiologist capable of leading multidisciplinary research group conduct personal studies at interface between atmosphere and biosphere. Contact by 1 June 1986: **Dr. D. G. Fox, RMF&RES, 240 West Prospect, Fort Collins, CO 80526; telephone 303-224-1231**

TAXONOMIC THEORIST/METHODOLOGIST. The Maryland Center for Systematic Entomology (MCSE), a consortium of 60 systematists and students at the University of Maryland, U.S. Department of Agriculture, and Smithsonian Institution, seeks a researcher in taxonomic methods to consult with and assist staff on data collection, analysis, and computer applications. Qualifications include: a Ph.D.; experience in zoological systematics; and proven ability to program computers and collaborate well. Position for 1 year, with possibility for renewal or permanence. Salary commensurate with experience. Send curriculum vitae, reprints, and names of four referees to: **Dr. M. E. Schauff, Systematic Entomology Laboratory, USDA, NHB 168, Smithsonian Institution, Washington, DC 20560, by 27 June 1986.** *MCSE's member institutions are Equal Opportunity Employers.*

VICE CHANCELLOR FOR HEALTH SCIENCES and Dean, School of Medicine, University of California, San Diego. Applications and nominations are invited for the position of vice chancellor for Health Sciences and dean, School of Medicine, University of California, San Diego. The search committee is seeking candidates with distinguished academic backgrounds and scholarship who have demonstrated leadership and academic administrative abilities. Applications and nominations should be submitted before 15 July 1986 to: **Lewis L. Judd, M.D.; Chair, Search Committee, UCSD School of Medicine (M-003); La Jolla, CA 92093.** *The University of California San Diego is an Affirmative Action/Equal Opportunity Employer.*

FELLOWSHIPS

The California Institute of Technology, Division of Engineering and Applied Science, invites applications for:

THE DR. CHAIM WEIZMANN POSTDOCTORATE FELLOWSHIPS FOR SCIENTIFIC RESEARCH

Caltech's Division of Engineering and Applied Science will award a limited number of **Dr. Chaim Weizmann postdoctorate fellowships** for scientific and engineering research. The fellowship will have a 1 to 2 year duration, beginning in the fall or winter of 1986. The program is restricted to U.S. citizens and is intended for those who have just completed their Ph.D.

Inquiries should be addressed to: **Professor Paul C. Jennings, Chairman, Division of Engineering and Applied Science, California Institute of Technology, Pasadena, CA 91125.** The deadline for completed applications is 31 August.

The institute is an Equal Opportunity/Affirmative Action Employer and welcomes applications from women and minorities.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP available immediately to engage in research related to biochemistry of free radicals, nutrition, and cancer. A recent Ph.D. is required. Send curriculum vitae and names of three referees to: **Dr. A. K. Ghoshal, Department of Pathology, Medical Sciences Building, University of Toronto, Toronto, Ontario, Canada M5S 1A8.**

POSTDOCTORAL FELLOWSHIPS IN PSYCHOBIOLOGY: We are accepting applications for M.D. or Ph.D. postdoctoral training in an NIMH-funded program. Training is centered around conducting independent research, with human subjects or animal models, of physiological and behavioral processes which underlie a variety of clinical disorders. Research interests of core faculty include: development of sleep-wake state, cardiovascular and respiratory regulation; ontogeny of feeding and associative learning; mother-infant interaction, separation and attachment; developmental toxicology; aggression; processes underlying pain and analgesia; the psychobiology of time and time perception. Stipends awarded according to NIMH guidelines for 1 year with 2-year option. NIMH requires trainees be U.S. citizens. To apply: send three reference letters, curriculum vitae and letter describing your research interests to: **Myron A. Hofer, M.D., Developmental Psychobiology, Columbia University, Box 40, 722 West 168 Street, New York, NY 10032.** *Affirmative Action/Equal Opportunity Employer.*

COURSES

BASIC IMMUNOCYTOCHEMICAL TECHNIQUES IN TISSUE SECTIONS AND WHOLE MOUNTS 20 to 25 October 1986

at
**Marine Biological Laboratory
Woods Hole, MA 02543**

Directors: **Barbara Beltz, Harvard Medical School and Gail Burd, University of Arizona**

\$800 includes tuition, materials, room and board; scholarships may be available.

For further information, contact: **The Office of Sponsored Programs; telephone: 617-548-3705, extension 216.**

CONFERENCE

The New York Academy of Sciences Conference on: CHEMICAL-INDUCED PORPHYRINOPATHIES 27 to 29 October 1986

The Rye Town Hilton, Rye Brook, New York

Heme and porphyrin metabolism are fundamental to cell biochemistry; this pathway is also highly sensitive to chemical-induced perturbation by a wide variety of inorganic and organic toxicants, including metals and polyhalogenated hydrocarbons. This conference will bring together researchers to discuss the results of recent basic research, and to identify relationships between chemical exposure and alternations in porphyrin synthesis in animal models and exposed human populations. Another goal is to evaluate the utility of porphyrins as biochemical markers of chemical exposure and toxic response. The relationship of altered porphyrin synthesis to genetic, carcinogenic, and chemical-induced disease states will be discussed with reference to the neurological, hematological, dermatological, hepatic, reproductive, renal, and other systems.

There will be contributed poster sessions. The deadline for submission of abstracts is 31 July 1986. A 200-word summary of work to be presented should be sent to: **Dr. Ellen Silbergeld, Toxic Chemicals Program, Environmental Defense Fund, 1616 P Street, NW, Washington, DC 20036.**

Organizers: **Ellen Silbergeld, Ph.D., Environmental Defense Fund, Washington, DC and Bruce A. Fowler, Ph.D., National Institute of Environmental Health Science Research, Triangle Park, NC.**

Inquiries should be addressed to: **Conference Department, The New York Academy of Sciences, 2 East 63 Street, New York, NY 10021.**

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DIVISION OF HORTICULTURAL RESEARCH BRISBANE QLD

GENERAL: The main aim of the Division's research is the improvement of wood perennial horticultural crops in Australia. These include a range of deciduous and evergreen species. Emphasis is placed upon the development of new techniques for the selection and breeding of improved plant types and on understanding the complex interaction between plant performance and the environment. The Division plans to expand its research programs in tropical horticulture in accordance with the findings of an external review of its research activities.

DUTIES: To lead a small group undertaking research on the physiological aspects of tropical fruit culture which is to be established in Brisbane. Previous research within the Division has accumulated a large body of knowledge on a wide range of tropical and subtropical fruit and nut crops. A large number of species have been introduced, selected and evaluated for their performance under Australian conditions. Aspects of their reproductive biology have also been investigated. The appointee will further develop the Division's studies in tropical fruitgrowing in areas best suited to their cultivation. There will be substantial collaboration with the Queensland Department of Primary Industry and with the New South Wales Department of Agriculture in the establishment of research projects in Queensland and northern New South Wales, and interaction with Divisional staff in Adelaide, Merbein and Darwin.

QUALIFICATIONS: A PhD degree or equivalent qualifications in plant physiology, botany and/or agriculture, plus demonstrated research ability. Experience in one or more of the following fields: reproductive physiology, tissue culture research, hormone physiology or orchard ecology would be an advantage. Consideration will be given to the appointment of outstanding applicants at a higher level.

SALARY LEVEL: Senior Research Scientist/Principal Research Scientist.

TENURE: Indefinite with Australian Government superannuation benefits available.

APPLICATIONS: Stating relevant personal particulars, including details of qualifications and experience, the names of at least two professional referees and quoting reference No. A2982, should be directed to:

The Chief
CSIRO Division of Horticultural Research
GPO Box 350
ADELAIDE SA 5001

By 4 weeks from date of publication.

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MERRELL DOW RESEARCH INSTITUTE

Strasbourg Center

invites applications for

Molecular Biologist and Cellular Immunologist

The Strasbourg Research Center is devoted to fundamental research directed toward therapeutic agents. Our international multidisciplinary group of scientists, (Chemistry, Biochemistry, Cellular Biology, Pharmacology) is well recognized for their contribution to science. The stimulating environment of the Center offers an opportunity for a high level of achievement.

The potential for future leadership in a growing concern is an important consideration. Highly motivated candidates ready to initiate avant-garde exploratory research projects are highly desirable. With experience it will be expected that the scientist will develop independently and foster the future directions of Center Science.

The successful candidates for these positions will have a doctorate and at least 1-2 years postdoctoral experience in their speciality. For the Molecular Biologist, experience in all aspects of recombinant technology and for the Cellular Immunologist, experience in modern immunology will be of importance. Research projects of current concern in our Centre are cell differentiation, cell membrane interactions and the results of these biological events on the design of potential therapeutic agents. Our Research Center is located in Strasbourg, FRANCE, the crossroads of Europe. With its excellent University, beautiful Cathedral and lovely setting on the Rhine, Strasbourg is a particularly inviting place to live. Salary and conditions of employment are commensurate with the importance of these positions and the experience of the appointees.

Please send C.V. + the names of 3 referees to Dr. Robert R. IRELAND, Director Merrell Dow Research Institute, 16 rue d'Ankara, 67084 Strasbourg Cédex France.

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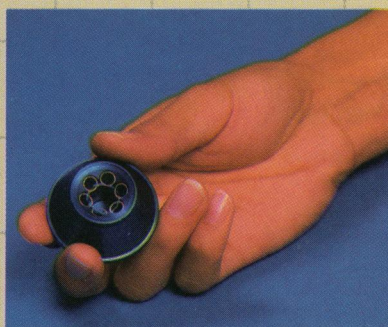
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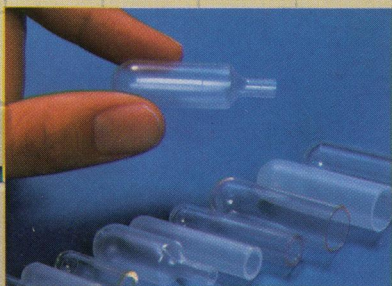
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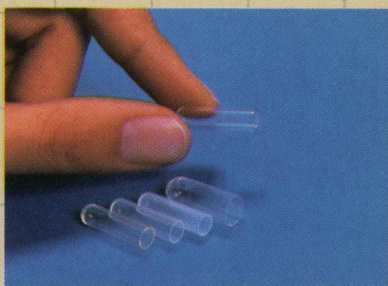
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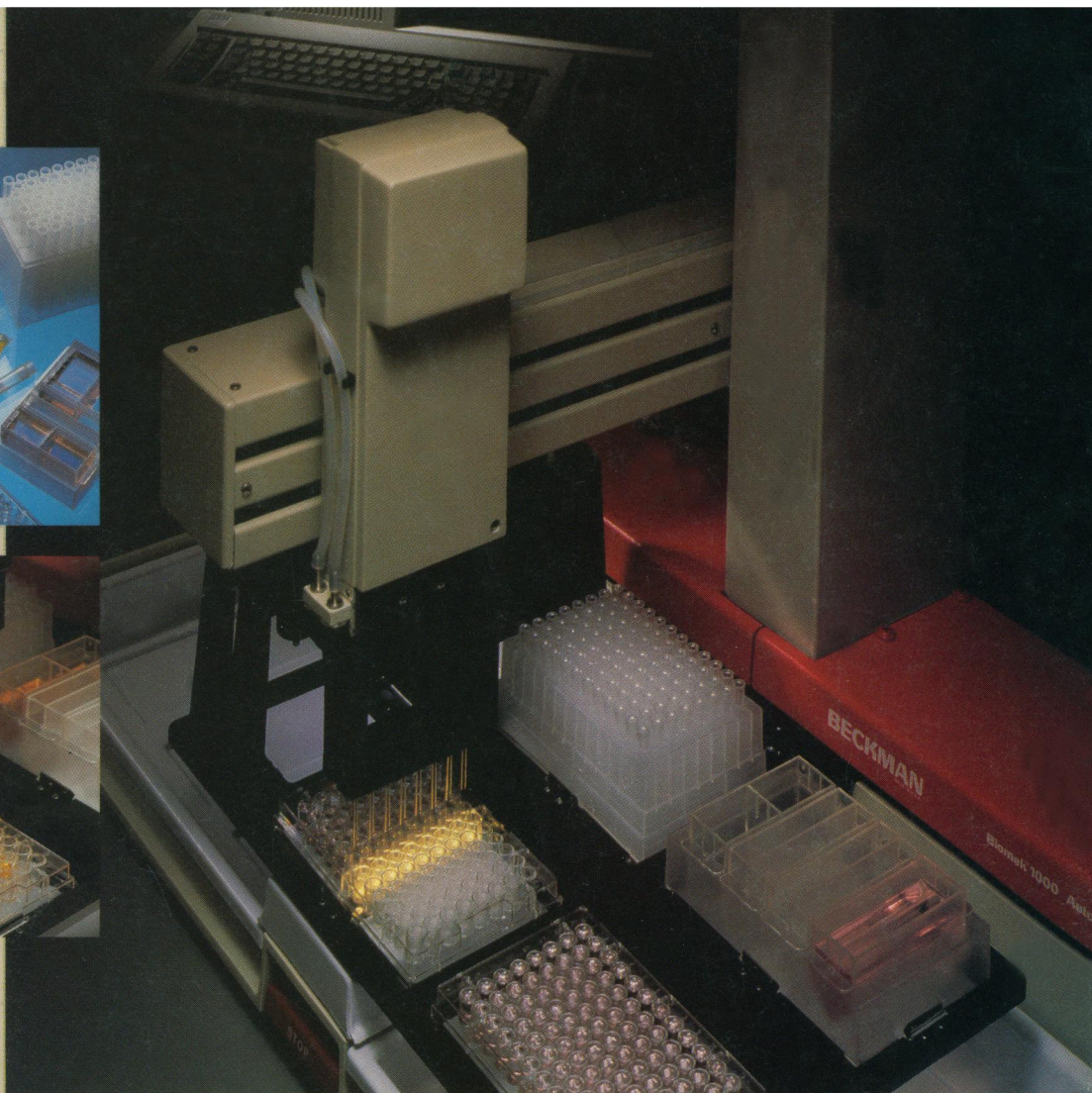
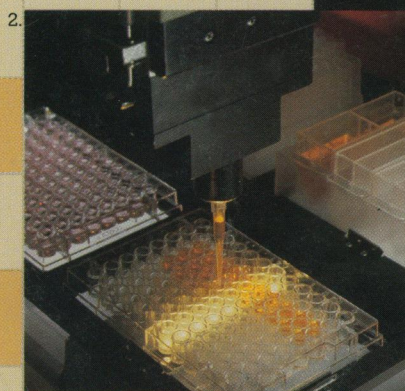
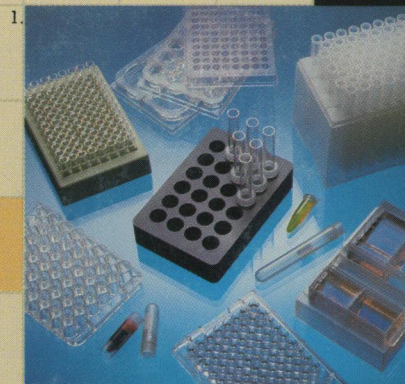
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