

ground material on German contributions to the development of modern astrophysics, and for that alone it is well worth having.

DAVID H. DEVORKIN

*National Air and Space Museum,
Washington, D.C. 20560*

The Cell Division Cycle

Cell Cycle Clocks. LELAND N. EDMUNDS, JR., Ed. Dekker, New York, 1984. xiv, 616 pp., illus. \$99.75.

This volume draws together a wide variety of data and models that pertain to the possible relation between intrinsic biochemical or circadian oscillators and the timing of events in the prokaryotic and eukaryotic cell division cycle.

The 27 chapters in the volume are divided into six sections, each prefaced by a short, useful introduction by the editor. Part 1 deals with general features of the origin and breakdown of temporal organization in cells in four chapters by Gilbert, Lloyd and Edwards, Klevecz, and Winfree. Part 2 considers models of the cell division cycle and its variability, with two especially interesting chapters on circadian variation by Thorud *et al.* and Keiding *et al.* and a most useful compendium of the variation in the phases of the cell cycle by Guiguet *et al.*

Part 3 deals with regulatory aspects of the cell division cycle and introduces the "events, sequences, pathways, and timers" that are central to much of the rest of the work presented. The initial chapter by Mitchison treats the interaction of the DNA division cycle and the growth cycle (updating the material first presented in his 1971 book). Painter and Tyson examine the possible role of periodic enzyme synthesis in the control of the cell cycle, and Poole reexamines the hypothesis that energy metabolism may serve as the timer for division (this hypothesis is also considered in the chapter by Lloyd and Edwards). In the next two chapters Cooper and Mendelson each examine the continuum and helix clock models of the cell cycle (the helix clock model proposes that spatial order may be utilized to provide temporal order for the cell division cycle). Analyses by Fantes and by Tyson and Sachsenmaier give strong support to the hypothesis that division is regulated by a cell "sizer" and thus offer a good springboard for Part 4, which examines the possible role of autonomous intrinsic oscillators with circadian or near-circadian periods in the control of the cell division cycle.

Shymko *et al.* and Petrovic *et al.* examine the possible role of a quantized oscillator with added noise in the cell division cycle. Edmunds and Laval-Martin summarize data from a variety of cell types that support the argument that there is a circadian-type oscillator involved in the timing of the cell division cycle. The final three chapters emphasize the interaction of environmental cues with the cell division cycle.

Part 5, which deals with the relation between the cell division cycle and cancer, opens with an interesting speculation by Willie and Scott about the way in which alteration of an underlying oscillator controlling the cell division cycle might lead to neoplastic transformation. Scheving and Moller each emphasize the importance to therapeutic interventions of circadian variation in the cell division cycle. Part 6 deals with the cell division cycle in development and aging. A paper by Belisle *et al.* is particularly interesting in its treatment of the relation between the cell division cycle and development in the sea urchin. The final chapter, by Zorn and Smith, presents new data on aging in cultured cells, which again indicate that aging is associated with a lengthening G_2 phase of the cell division cycle.

The book is noteworthy for the number of new data presented and the number of new and imaginative proposals made concerning the regulation of the cell cycle. The editor is to be congratulated for his selections and for the production of a finished product in which the chapters exhibit a high degree of conformity.

MICHAEL C. MACKEY

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Books Received

Annual Review of Energy. Vol. 9. Jack M. Hollander and Harvey Brooks, Eds. Annual Reviews, Palo Alto, Calif., 1984. xii, 577 pp., illus. \$56.

Annual Review of Physical Chemistry. Vol. 35. B. Seymour Rabinovitch, J. Michael Schurr, and Herbert L. Strauss, Eds. Annual Reviews, Palo Alto, Calif., 1984. xiv, 733 pp., illus. \$28.

Antarctic Earth Science. R. L. Oliver, P. R. James, and J. B. Jago, Eds. Cambridge University Press, New York, 1984. xxii, 697 pp., illus. \$79.50. From a symposium, Adelaide, Australia, Aug. 1982.

Blowout Prevention. Theory and Applications. Peter G. Mills. International Human Resources Development Corporation, Boston, 1984. xvi, 193 pp., illus. \$46.

Boundary Areas in Social and Developmental Psychology. John C. Masters and Kerry Yarkin-Levin, Eds. Academic Press, Orlando, Fla., 1984. xvi, 319 pp. \$39.

Carcinogenesis and Mutagenesis Testing. J. F. Douglas, Ed. Humana, Clifton, N.J., 1984. xx, 335 pp., illus. \$49.50. Contemporary Biomedicine.

Carcinoma of the Esophagus and Gastric Cardia. Guo Jun Huang and Wu Ying K'ai, Eds. Springer-Verlag, New York, 1984. x, 395 pp., illus. \$109.

Eucalypts for Wood Production. W. E. Hillis and A. G. Brown, Eds. Commonwealth Scientific and Industrial Research Organization, East Melbourne, Australia, and Academic Press, Orlando, Fla., 1984. xii, 434 pp., illus. \$55.50.

European Urbanization 1500-1800. Jan de Vries. Harvard University Press, Cambridge, Mass., 1984. xviii, 398 pp., illus. \$28.50. Harvard Studies in Urban History.

Everybody's Guide to Homeopathic Medicines. Stephen Cummings and Dana Ullman. Tarcher, Los Angeles, 1984 (distributor, Houghton Mifflin, Boston). xii, 312 pp. \$14.95; paper, \$8.95.

Fishery Management. J. L. McHugh, Springer-Verlag, New York, 1984. viii, 207 pp., illus. Paper, \$15. Lecture Notes on Coastal and Estuarine Studies, vol. 10.

Flying Free. Dan True. Dodd, Mead, New York, 1984. vi, 163 pp., illus. \$13.95.

Foundations of Genetics. A Science for Society. Anna C. Pai. 2nd ed. McGraw-Hill, New York, 1984. xvi, 464 pp., illus. Paper, \$23.95.

Isotopes and Radiation in Agricultural Sciences. M. F. L'Annunziata and J. O. Legg, Eds. Academic Press, Orlando, Fla., 1984. Two volumes. Vol. 1, Soil-Plant-Water Relationships. xxii, 292 pp., illus. \$60. Vol. 2, Animals, Plants, Food and the Environment. xxii, 356 pp., illus. \$75.

Issues and Reviews in Teratology. Vol. 2. Harold Kalter, Ed. Plenum, New York, 1984. xvi, 516 pp., illus. \$69.50.

The Jivaro. People of the Sacred Waterfalls. Michael J. Harner. University of California Press, Berkeley, 1984. xx, 234 pp. + plates. \$24.95; paper, \$7.95. Reprint with new preface, 1972 edition.

A Killing Rain. The Global Threat of Acid Precipitation. Thomas Pawlick. Sierra Club Books, San Francisco, 1984 (trade distributor, Random, New York). x, 206 pp. \$14.95.

Land Reform in Mexico: 1910-1980. Susan R. Walsh Sanderson. Academic Press, Orlando, Fla. 1984. xx, 188 pp., illus. \$35. Studies in Social Discontinuity.

Large Hadron Collider in the LEP Tunnel. Vol. 1. CERN, Geneva, 1984. x, 361 pp., illus. Paper. CERN 84-10. From a workshop, Lausanne and Geneva, March 1984.

Monopole '83. James L. Stone, Ed. Plenum, New York, 1984. xiv, 699 pp., illus. \$105. NATO ASI Series B, vol. 111. From a workshop, Ann Arbor, Mich, Oct. 1983.

Mortuary Variability. An Archaeological Investigation. John M. O'Shea. Academic Press, Orlando, Fla., 1984. xiv, 342 pp., illus. \$49. Studies in Archaeology.

Nonlinear Electrodynamics in Biological Systems. W. Ross Adey and Albert F. Lawrence, Eds. Plenum, New York, 1984. xii, 603 pp., illus. \$89.50. From a conference, Loma Linda, Calif., June 1983.

Nuclear America. Military and Civilian Nuclear Power in the United States, 1940-1980. Gerard H. Clarfield and William M. Wiecek. Harper and Row, New York, 1984. x, 518 pp. \$19.95.

Nutrition, Hypertension and Cardiovascular Disease. Ronald S. Smith. Lyncean Press, Gilroy, Calif., 1984. iv, 210 pp. Paper, \$12.95.

Ocean Uses and Their Regulation. Luc Cuyvers. Wiley-Interscience, New York, 1984. xii, 179 pp., illus. \$29.95.

On Food and Cooking. The Science and Lore of the Kitchen. Harold McGee. Scribner, New York, 1984. xviii, 684 pp., illus. \$29.95.

Psychophysiological Perspectives. Festschrift for Beatrice and John Lacey. Michael G. H. Coles, J. Richard Jennings, and John A. Stern, Eds. Van Nostrand Reinhold, New York, 1984. xviii, 317 pp., illus. \$29.50. From a symposium, Minneapolis, Oct. 1982.

Pulsed Light Sources. I. S. Marshak. Consultants Bureau (Plenum), New York, 1984. xii, 461 pp., illus. \$75. Translated from the second Russian edition.

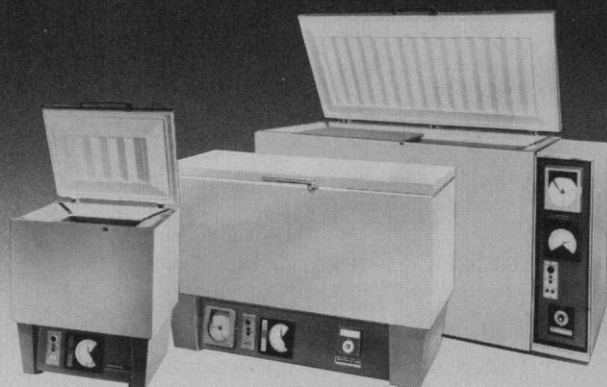
QSAR in Environmental Toxicology. Klaus L. E. Kaiser, Ed. Reidel, Boston, 1984 (distributor, Kluwer Boston, Hingham, Mass.). xiv, 406 pp., illus. \$54.50. From a workshop, Hamilton, Ontario, Canada, Aug. 1983.

Relativity and Engineering. J. Van Bladel. Springer-Verlag, New York, 1984. xii, 402 pp., illus. \$29. Springer Series in Electrophysics, vol. 15.

Renal Effects of Petroleum Hydrocarbons. Myron A. Mehlan *et al.*, Eds. Princeton Scientific Publishers, Princeton, N.J., 1984. xvi, 306 pp., illus. \$60. Advances in Modern Environmental Toxicology, vol. 7. From a workshop.

Symmetries in Particle Physics. Itzhak Bars, Alan Chodos, and Chia-Hsiung Tze, Eds. Plenum, New York, 1984. viii, 311 pp. \$75. From a symposium, New Haven, Conn., April 1981.

System Sciences and Modelling. A. Ruberti, Ed. Reidel, Boston, and Unesco, Paris, 1984 (distributor, Kluwer Boston, Hingham, Mass.). xiv, 159 pp. \$24.50. Trends in Scientific Research 1.



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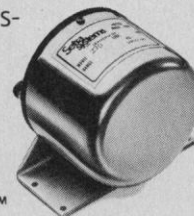
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Reviewed in *Annals of Internal Medicine* 100:621, *Educational Computer* April 1984, *Immunology Today* 4:271, *Trends in Neurosciences* Sept. 1984, *Micro-Vision* Fall 1984 preview issue.

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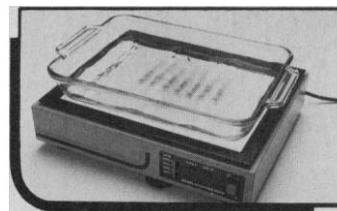
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ASSISTANT PROFESSOR OF BIOLOGY. Mesa College seeks candidates for a tenure-track position. Primary responsibility is teaching undergraduate majors introductory courses, and upper division courses including mycology, lower plant biology, and entomology. Experience in electron microscopy also an asset. Research encouraged. Must have Ph.D. and college teaching experience. Inquiries and curriculum vitae by 31 March 1985 to: **Dr. William E. Putnam, Dean, School of Natural Sciences and Mathematics, Mesa College, Grand Junction, Colo. 81502.**

Mesa College is an Equal Opportunity/Affirmative Action Employer.

CHILD PSYCHIATRIST

Full-time, tenure-track faculty position on the Child Psychiatry Service of the Department of Psychiatry, University of Michigan Medical School.

Individual will serve as both the associate director of the newly created Chronic Emotional Disorders Unit for Children and as attending physician in either the Child Psychiatry Outpatient Program or the Pediatrics Consultation Liaison Program. Responsibilities include direction of multidisciplinary inpatient team, coordination of inpatient and follow-up outpatient care, supervision of house officers, child fellows and medical students, and clinical research activities. The clinical research focus of the unit is personality disorders of childhood; the appointee is expected to participate in the clinical research of the program and eventually to develop an area of research interest. Board-certification in child psychiatry is highly desirable, interest and expertise in the use of psychotropic medications in children is essential, and evidence of relevant clinical research interests is required. Candidates should submit curriculum vitae and two names of references to: **A. E. Solyom, M.D., Ph.D., Director, Chronic Emotional Disorders Unit for Children, Children's Psychiatric Hospital, Ann Arbor, Mich. 48109.** The University of Michigan is an Affirmative Action Employer.

NORTH DAKOTA STATE UNIVERSITY DEAN OF GRADUATE STUDIES AND RESEARCH

North Dakota State University invites applications and nominations for the position of Dean of Graduate Studies and Research. The successful candidate, working in conjunction with other deans, will be expected to provide dynamic leadership in further developing and strengthening the programs of graduate studies and research. The individual must hold an earned doctorate, have a substantial record of scholarly productivity and funded research, and have proven administrative experience appropriate for providing strong leadership in graduate studies and research in a major land-grant institution. The individual should also have excellent communicative skills and the ability to interact with individuals from a wide variety of disciplines.

The Dean of Graduate Studies and Research reports to the Vice President for Academic Affairs. The dean is the chief administrative officer of the Graduate School and is responsible for evaluating graduate programs, overseeing admission to the Graduate School, approving graduate programs of study and theses, and serving as an advocate for graduate programs. The dean provides leadership in the continued development of excellence in graduate programs, and must be committed to the principle of interdependence of research and graduate education.

The dean has responsibility for the facilitation, development, and promotion of research programs and the administration of research policies. This responsibility includes providing leadership in state and federal funding efforts; developing relationships with industry, supporting research grants and contracts, administering University policies related to research, and assisting faculty in seeking out funding agencies and in preparing research grant proposals. The dean will also have responsibility for encouraging and facilitating interdisciplinary and interinstitutional programs and advising the Vice President for Academic Affairs on financial and physical resources pertaining to research.

North Dakota State University, founded in 1890, has a long and distinguished tradition of land-grant involvement. There are eight undergraduate and professional colleges and a wide range of graduate programs. There are 14 doctoral and 48 master's programs of study. The undergraduate and professional colleges are Agriculture, Engineering and Architecture, Home Economics, Humanities and Social Sciences, Pharmacy, Science and Mathematics, and University Studies. The University also has an Institute of Teacher Education.

Closing date for this position is 5 April or thereafter until a suitable candidate is selected. Applicants and nominees should send a letter of interest, along with an up-to-date curriculum vitae and the names of five references, to: **Chair of the Search Committee, Dean of Graduate Studies and Research, Office of the Vice President for Academic Affairs, North Dakota State University, Fargo, North Dakota 58105. Telephone: 701-237-7131.**

North Dakota State University is an Equal Opportunity Institution.

Molecular Neurobiologist/ Neurochemist

Applications are invited for a MOLECULAR NEUROBIOLOGIST/NEUROCHEMIST in the Lion's Sight Centre and the Department of Medical Biochemistry in The University of Calgary, Faculty of Medicine.

Level of appointment and salary will be commensurate with experience and qualifications. Applicants should have a M.D. and/or Ph.D., at least two years postdoctoral research training, and a strong commitment to a productive research program in molecular biology relating to photoreceptors or synaptic transmission in the visual system.

The successful applicant will be expected to devote 75% of their time to the establishment of an original, independent research program in the interdisciplinary Neuroscience Research Group. There will also be limited opportunities for teaching in medical and graduate neuroscience courses. The position will be funded by successful competition for a Scholarship and Establishment Grant from the Alberta Heritage Foundation for Medical Research.

All qualified individuals are encouraged to apply but preference will be given to Canadian citizens and permanent residents.

Applications must be received by April 15, 1985, for appointment to be effective in 1986. Please send a curriculum vitae, statement of research interests and the names of three referees to:



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

MICROBIOLOGY/TUMOR BIOLOGY/ PHARMACOLOGY

Cetus Corporation has openings for scientists in a growing Preclinical Investigations group. Individuals will carry on research programs in the areas of micro-biology, tumor biology or pharmacokinetics/developmental therapeutics. These projects will play a vital role in Cetus' development of new biotechnology-based health-care products.

Candidates should have at least 5 years' of post-doctoral experience and documented evidence of independent, productive and innovative research using animal models.

Please send resume in confidence to:

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

EOE



Recent Advances In Primary And Acquired Immunodeficiencies.

April 10-12, 1985
Boston, Massachusetts

Sponsored by Ares Sero Symposia.

This Symposium will cover the latest developments in: molecular genetics of the effector cells of the immune system, the molecular mechanisms of various forms of immunodeficiencies, and the role of interferons, thymic hormones and other lymphokines in immunotherapy.

Program topics include: ontogeny and activation of T and B cells, lymphokines, membrane defects, immunobiology of immunodeficiencies, AIDS, and immunotherapy of immunodeficiencies.

Invited speakers include:

B. Benacerraf	R. Gatti	F. Rosen
H. Colten	R. Geha	G. Ross
M. Cooper	S. Gilman	F. Ruscetti
S. Cunningham-	G. Goldstein	S. Schlossman
Rundles	R. Good	T. Springer
M. Davis	S. Gupta	E. Unanue
A. Fauci	A. Hayward	T. Waldmann
H. Fudenberg	J. Kappler	R. Wedgwood
R. Gallo	S. Krown	F. Wong-Staal

A limited number of short communications will be accepted for poster presentations.

For registration information and abstract forms, contact:
Dr. Ching Lau, Sero Symposia, USA, toll-free at 800/225-5185.
In Massachusetts, 617/963-8154.

Sero Symposia, USA
280 Pond Street
Randolph, MA 02368

POSITIONS OPEN

DEPARTMENT OF BIOCHEMISTRY COLLEGE OF MEDICINE UNIVERSITY OF SOUTH ALABAMA

Applications are invited for a tenure-track position at the **ASSISTANT PROFESSOR** level, available immediately. The area of research is open. Special consideration will be given, however, to applicants in the areas of molecular biology or membrane biochemistry who have a strong background in physical biochemistry. The successful applicant will be expected to participate enthusiastically and effectively in teaching medical and graduate students, and to establish a strong, independent research program.

Candidates should submit curriculum vitae (including a list of publications and a summary of research objectives) and the names of at least three references to:

Dr. Joe M. McCord, Chairman
Department of Biochemistry
College of Medicine
University of South Alabama
Mobile, Ala. 36688

Deadline for receipt of applications is 1 April 1985. *The University of South Alabama is an Equal Opportunity Employer.*

ASSISTANT PROFESSOR—BIOCHEMISTRY

The Department of Biochemistry, School of Medicine, State University of New York at Stony Brook (SUNY), has a tenure-track position available at the assistant professor level, beginning fall 1985. Applications are welcome from persons with an outstanding potential for research as well as a talent for teaching. Applicants should send complete curriculum vitae with reprints, research interests, and names of three references to: **Dr. Masayori Inouye, Chairman, Department of Biochemistry, SUNY at Stony Brook, Stony Brook, N.Y. 11794-5215.**

Application deadline: 15 April 1985.

SUNY, Stony Brook, is an Affirmative Action/Equal Opportunity Educator and Employer. AK Number 27C-85.

ASSISTANT OR ASSOCIATE PROFESSOR OF HORTICULTURAL PLANT MATERIALS, University of Washington; 12-month, tenure-track; 60 percent research in plant materials, taxonomy, and systematic studies; 25 percent graduate teaching; 15 percent public service; supervision of staff for Washington Park Arboretum. Require well-trained systematist; possible research focus in taxonomy and evolutionary development of temperate zone horticulturally significant plants, differentiation and selection of horticultural cultivars; Ph.D. in botany or plant science related field. Respond to: **Dr. H. B. Tukey, Jr., Center for Urban Horticulture, GF-15, University of Washington, Seattle, Wash. 98195. Telephone: 206-543-8616.**

The Department of Pathology, Medical College of Georgia, Augusta, Georgia, invites applications for a faculty position at the rank of **ASSISTANT OR ASSOCIATE PROFESSOR**. The candidate should have a Ph.D. degree with demonstrated leadership in research and teaching. The position will have the responsibility of directing a hospital laboratory performing service in immunochemistry and immunomorphology, establishing independent research programs, and participation in graduate and undergraduate teaching. Experience in flow cytometry is desirable. Applicants should submit curriculum vitae and references to: **Dr. R. N. Rao, Chief, Section of Anatomic Pathology, Medical College of Georgia, Augusta, Georgia 30912. Equal Opportunity/Affirmative Action Employer.**

ASSISTANT RESEARCH BIOLOGIST

Assistant research biologist position available immediately. Applicants must have Ph.D. (or equivalent) and several years of postgraduate training in the following areas (as proven by publications): Experience with isolation and purification of bacteriophage ϕ X174 coded proteins and host-originated proteins involved in ϕ X174 DNA replication, in vitro synthesis of ϕ X174 phage particles, knowledge of biochemistry of bacteriophage ϕ X174 infected cells, microbial and bacteriophage mutant construction, and experience with recombinant DNA techniques. Salary range: \$27,300 to \$36,000 per year. Please send résumé and three letters of reference by 1 April 1985 to: **Lynn Williams, Search Committee, Department of Biology, B-022, University of California, San Diego, La Jolla, Calif. 92093.**

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

POSITIONS OPEN

COLLEGE OF THE VIRGIN ISLANDS VACANCY NOTICE

VISITING ASSISTANT OR ASSOCIATE PROFESSOR OF CHEMISTRY (nontenure-track, renewable) beginning 15 August 1985. Candidate should have a doctorate in organic chemistry or biochemistry and college-level teaching experience. Indication of exceptional ability in teaching introductory and advanced science courses is important. Will teach 12 credit hours per semester in organic chemistry and biochemistry. May be asked to teach instrumental analysis or a course in physical science for non-science majors. Aggregate compensation: \$24,526 to \$34,027 plus liberal benefits. Address letter of application, résumé, and three letters of recommendation by 30 April 1985 to: **Dr. LaVerne Ragster, Chairperson, Division of Science and Mathematics, College of the Virgin Islands, St. Thomas, U.S. Virgin Islands 00802.**

Equal Opportunity/Affirmative Action Employer

COLLEGE OF THE VIRGIN ISLANDS NOTICE OF VACANCY

VISITING ASSISTANT OR ASSOCIATE PROFESSOR OF MARINE BIOLOGY (nontenure-track, renewable) beginning 15 August 1985. Candidates should have a doctorate in marine ecology, marine biology or related field, and college-level teaching experience. Field experience and research interest in tropical shallow-marine ecosystems and vertebrates are desirable. Will teach up to 12 credit hours per semester in oceanography, marine ecology, directed research in marine biology and/or selected topics in marine biology. Aggregate compensation: \$24,526 to \$34,027 plus liberal benefits. Address letter of application, résumé, and three letters of recommendation by 30 April 1985 to: **Dr. LaVerne Ragster, Chairperson, Division of Science and Mathematics, College of the Virgin Islands, St. Thomas, U.S. Virgin Islands 00802.**

Equal Opportunity/Affirmative Action Employer

The Department of Veterinary Biosciences, College of Veterinary Medicine, University of Illinois, Urbana-Champaign, is seeking applications for a permanent tenure-track position at the **ASSISTANT PROFESSOR** level in the area of **VETERINARY MACRO- OR MICROANATOMY**. Position is contingent upon the receipt of new funds in the 1985-1986 academic year. Individual will teach either macro- or microscopic anatomy in the veterinary medical curriculum and will be expected to develop a research program and participate in graduate instruction. Starting date on or after 1 July 1985.

Candidates should possess the Ph.D. degree or equivalent with preference to those who also hold the D.V.M. or equivalent. The applicant must use English fluently. Salary commensurate with qualification. To ensure full consideration, applications should be received by 15 May 1985.

Send curriculum vitae and three names for references to: **Gerald J. Pijanowski, Chairperson, Anatomy Search Committee, University of Illinois, Department of Veterinary Biosciences, 2001 South Lincoln, Urbana, Ill. 61801. Telephone: 217-333-2506.**

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

ASSISTANT RESEARCH BIOLOGIST

Electron microscopist with Ph.D. and postdoctoral experience in cryoultramicrotomy and immunoelectron microscopy, and the techniques of cell culture and immunofluorescence, to carry out studies of protein biosynthesis and intracellular pathways in hepatocyte cultures. Apply by 1 May 1985 to: **Dr. S. J. Singer and Dr. K. Tokuyasu, Search Committee, Department of Biology, B-022, University of California, San Diego (UCSD), La Jolla, Calif. 92093.** Salary related to rank and step of appointment within the established salary schedule of the UCSD research series.

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

CHIEF, MONITOR OF CLINICAL STUDIES

Showa University Research Institute has an opening for management of clinical studies intended for marketing new drugs in the United States and Japan. Incumbent will serve as liaison between clinicians, pharmaceutical industries, and federal drug regulatory agencies. Applicant should possess a doctoral degree with at least 7 years of drug development experience. For information, telephone: 813-576-6675, or write: **Personnel Department, Showa University Research Institute, 10900 Roosevelt Boulevard, St. Petersburg, Fla. 33702.**

POSITIONS OPEN

DEPARTMENT OF MICROBIOLOGY, University of Missouri-Columbia, School of Medicine, invites applications for a tenure-track position at the level of **ASSISTANT/ASSOCIATE PROFESSOR**. The successful candidate is expected to conduct outstanding, independent research which will complement and supplement multiple-funded programs in prokaryotic and eukaryotic molecular genetics, pathogenesis, immunobiology, and molecular parasitology in a heavily research-oriented department and to participate in education of graduate and medical students. Send curriculum vitae, names of three references, and brief statement of research interests no later than 30 June 1985 to: **Chairman, Search Committee, Department of Microbiology, School of Medicine, University of Missouri-Columbia, Columbia, Mo. 65212. The University of Missouri is an Equal Opportunity/Affirmative Action Institution.**

UNIVERSITY OF GUELPH PHARMACOLOGY

Applications are invited for a probationary (tenure-track) **ASSISTANT PROFESSORSHIP IN PHARMACOLOGY**, available 1 September 1985. Major teaching responsibilities will be in **PHARMACOLOGY** courses in the B.Sc. honors and D.V.M. programs, with lesser duties in aspects of toxicology. The successful candidate will be expected to develop independent research programs in pharmacology, particularly in areas associated with pulmonary gastrointestinal or reproductive disorders. Participation in graduate education in pharmacology will be expected also. Applicants must hold a Ph.D. (or equivalent) in a relevant area of pharmacology. A D.V.M. (or equivalent) degree with experience or interest in an applied area of veterinary medicine will be sought, together with evidence of successful teaching and research.

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

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

Closing date: 30 April 1985 or until filled.

UNIVERSITY OF GUELPH TOXICOLOGY

Applications are invited for a probationary (tenure-track) **ASSISTANT PROFESSORSHIP IN ANIMAL TOXICOLOGY**, available 1 September 1985. Major teaching responsibilities will be in **TOXICOLOGY** courses in the B.Sc. honors and D.V.M. programs, with lesser duties in aspects of pharmacology. The successful candidate will be expected to develop independent research in toxicology in relation to health of food-producing animals: particularly in the areas of drug residues, drug and toxic chemical metabolism. Participation in graduate education in animal health toxicology will be expected also. Applicants must have a Ph.D. (or equivalent) in a relevant area of toxicology. A D.V.M. degree with experience or interest in an applied area of veterinary medicine will be sought, together with evidence of successful teaching and research.

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

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

BIOCHEMISTRY FACULTY POSITION RICE UNIVERSITY

The Department of Biochemistry at Rice University invites applications for a faculty position at the level of assistant professor. Clear distinction in creative research and education are essential requirements. Preference will be shown to candidates in the fields of molecular and cellular biology; however, applications are encouraged from all outstanding candidates irrespective of their fields of interest. Send résumé, a brief outline of future research plans, and the names of three references to: **J. S. Olson, Chairman, Department of Biochemistry, Rice University, P.O. Box 1892, Houston, Texas 77251. Rice University is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

ASSISTANT RESEARCH BIOLOGIST

Scripps Institution of Oceanography (SIO) invites applications for an assistant research biologist position. The incumbent will be expected to apply methods of optical remote sensing to the study of biological processes in the oceans. Strong interest in photobiology and in the generation of spectral signatures by plant pigments are important assets. The position will be sponsored by the Visibility Laboratory and will be at the assistant research biologist level (\$29,600 to \$37,400, commensurate with qualifications). Applicant should have a background in biological oceanography at the Ph.D. level or equivalent. Private foundation funding provides support for up to 2 years and is limited to U.S. citizens.

Submit résumé, including names of three references, before 1 April 1985 to: **R. W. Austin, Director, Visibility Laboratory, P-003, Scripps Institution of Oceanography, University of California, San Diego (UCSD), La Jolla, California 92093.** Request position profile at the same address.

SIO/UCSD is an Equal Opportunity/Affirmative Action Employer.

AUTOIMMUNITY TO CARTILAGE IN RHEUMATIC DISEASES AND CALCIFICATION OF CARTILAGE IN ENDOCHONDRAL OSSIFICATION

**Joint Diseases Laboratory
Shriners Hospital for Crippled Children
McGill University
1529 Cedar Avenue
Montreal, Quebec, Canada H3G 1A6**

In the near future there will be three vacancies for either visiting scientists (\$28,000 per annum, with travel assistance), postdoctoral scientists (for at least 3 years), or graduate students (fees assistance provided) for people working in the above areas with Dr. A. R. Poole on the molecular biology of cartilage calcification (involving chondrocalcin) and T-cell mediated autoimmunity (T-cell clones) to cartilage collagen and proteoglycan in rheumatoid arthritis and ankylosing spondylitis and animal models thereof. Applications naming three professional referees and describing in detail previous experience and area of interest should be sent to: **Dr. A. Robin Poole**, at the above address.

BIOANALYTICAL CHEMIST. The Department of Veterinary Diagnostic Investigation, College of Veterinary Medicine, University of Minnesota, has a tenure-track assistant professor position available 1 July 1985 to be responsible for a drug testing laboratory providing service to the Minnesota Racing Commission. Duties include responsibility for the daily operation of the equipment (GC/MS, and so forth) and personnel in the equine drug testing laboratory, the development of a research program relevant to the activities of the testing laboratory, and participation in the teaching of the College of Veterinary Medicine. Ph.D., laboratory experience in analytical chemistry, and zero years of postdoctoral experience required. Additional 2 years of postdoctoral experience and experience in analysis of trace organics in biological fluids and tissues preferred. Send curriculum vitae and names of three references by 30 April 1985 to: **Dr. Glen Nelson, Department of Diagnostic Investigation (G), College of Veterinary Medicine, University of Minnesota, 1943 Carter Avenue, St. Paul, Minn. 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

CELL BIOLOGIST

A nontenure-track position for a cell biologist is available immediately at the research instructor level. An interest in problems of cell motility and the cytoskeleton, and in particular structural and biochemical studies of the mechanism of dynein in flagellar motility is desired. Experience in electron microscopy is essential, and skills in immunohistochemistry and cell fractionation techniques are desirable. The individual appointed will be expected to participate in a team-taught medical school cell biology course and to devote a limited portion of time to supervision of the departmental EM facility which consists of a JEOL-100CX, Philips 300, and Philips 400 transmission electron microscopes and a Balzers freeze-fracture apparatus. Submit curriculum vitae, short statement of research interest and teaching experience, and the names of four referees to: **Dr. Jerome Sutin, Chairman, Department of Anatomy, Emory University School of Medicine, Atlanta, Ga. 30322.**

Emory University is an Equal Opportunity/Affirmative Action Employer.

PH.D. SCIENTISTS

PLANT GENETIC ENGINEERING

Agracetus, a partnership of Cetus Corporation and W.R. Grace & Co. is applying biotechnology to agriculture. We are developing genetically engineered plants to increase vigor and yield of major field crops.

We are looking for innovative, self-motivated individuals with expertise in manipulation of recombinant DNA, cDNA cloning, and site-specific mutagenesis. Postdoctoral work in a dynamic laboratory is essential. Previous experience with eukaryotic molecular biology will be helpful.

Scientists chosen for these positions will participate in an exciting interdisciplinary research effort.

We offer a competitive salary, a comprehensive benefits package, and advancement opportunity. Please send your detailed resume to:

**Personnel Department, Agracetus
8520 University Green
Middleton, WI 53562**

*We are an equal opportunity/
affirmative action employer*

POST-DOCTORAL RESEARCH FELLOW NEUROBIOLOGY

The Social and Biological Studies Division of the Addiction Research Foundation offers a post-doctoral research position which will focus on studies of opiate and ethanol self-administration designed to elucidate brain substrates mediating this behaviour.

Preferred applicants will have a background in operant research, specifically in drug self-administration studies, and training in the neurosciences area.

This position is available immediately and is for a term of one year, with a possible one-year renewal.

Please forward your curriculum vitae to:

**Janice Kussner
Recruitment Specialist
Personnel Department
Addiction Research Foundation
33 Russell Street
Toronto, Ontario
Canada M5S 2S1**



**Addiction
Research
Foundation**

Millipore, a Fortune 1000 international corporation, is a world leader in the field of Separations Technology — products and processes needed in the analysis and purification of fluids. Our Millipore Products Division, located in Bedford, MA, currently has an outstanding opportunity available. This position offers excellent exposure and advancement opportunity.

MANAGER MICROBIOLOGY QUALITY CONTROL

Our Millipore Products Division seeks an experienced manager who will direct the efforts of our Microbiology Quality Control group. This group supports the Division's Advanced Manufacturing facility in process and final product qualification, and also supports Marketing and Sales, R&D, and Manufacturing on a variety of microbiology-related issues. The selected candidate will possess a Ph.D. plus 4 years' industrial microbiology quality control experience, or an MS and 6 years' similar experience. Proven management expertise essential.

Interested candidates attending the ASM meeting in Los Angeles, March 4-8, may contact our Representative at our booth, or send their resume with salary history to the Employment Manager, Millipore Corporation, 80 Ashby Road, Bedford, MA 01730.

An Equal Opportunity Employer M/F/H/V

MILLIPORE
Millipore Products Division

Begin Your Career with a Leader!

Join PROCTER & GAMBLE'S research and product development team!

The Procter & Gamble Company, one of the top U.S. industrial corporations, has a number of entry-level positions available for Ph.D. or postdoctoral life scientists at our Cincinnati, Ohio research facilities. These openings can mean unique career opportunities for the right persons.

Our areas of special interest are detailed in this advertisement. But first, a little about who we are:

The Procter & Gamble Company

P&G is a multinational, technically-based corporation with \$13 billion annual sales, representing more than 70 consumer brands in 36 different product categories. These categories include pharmaceutical, paper, health care, beauty care, beverage, detergent, soap, food, fabric care, and industrial chemical products. Our sales doubled in the last 10 years, and we continue to expand our product base to assure future growth.

We are a corporation known for its employment stability, excellent management, and a strong commitment to research and development. *You should know that Procter & Gamble promotes from within, based strictly on merit.* P&G salaries are highly competitive and benefit plans, including Profit Sharing, rank among the top in U.S. industry.

We are looking for outstanding candidates in the following fields:

TOXICOLOGY

General Toxicology—compound/product safety—risk assessment—issue management

Genetic Toxicology—short-term testing for mutagenesis/carcinogenesis, initiation/promotion mechanisms in carcinogenesis

Developmental Toxicology—reproductive and developmental hazard identification, morphological and functional teratology, *in vitro* screening methods, risk assessment

Neurotoxicology—xenobiotic effects on central and peripheral nervous systems

Environmental Toxicology—aquatic biology/ecology, laboratory and field research on the effects of chemicals and/or effluents on aquatic ecosystems

PHARMACOLOGY

Biochemical Pharmacology—neurochemical, neuropharmacological, drug receptor interactions with CNS-active agents

Research Pharmacology—drug metabolism, pharmacokinetics, metabolite isolation

MICROBIOLOGY

Environmental Microbiology—microbial physiology/ecology, biochemistry, research on fate/transformation of chemicals in environmental systems

Microbiology/Medical Microbiology—characterization of host-parasite interactions, design and testing of novel therapies, experience with microbes of clinical significance

Microbiology/Applied—preservation and qualification of developmental products: process and production monitoring—microbiological consultant on all matters pertaining to divisional products

BIOLOGY

Molecular Biology—isolation, insertion, and expression into appropriate hosts of mammalian genes

Developmental Biology—*in vitro* teratology—male reproductive toxicity—reproductive physiology—functional teratology

BIOCHEMISTRY

Biochemistry, Pharmacology, Physiology—research on liver function, endocrinology, and intermediary metabolism—hormonal regulation of liver metabolism

Biochemistry, Biophysics—therapeutic agent development—drug metabolism—pharmacokinetics—dosage form development—physical measurements of biological processes *in vivo*

Biochemistry—cellular biochemical processes—epidermal differentiation and active skin processes— isolation and characterization of naturally occurring biochemicals

Protein Biochemistry—isolation of minor protein constituents from biological mixtures—surface chemical behavior of proteins

RELATED SCIENCES

Biostatistics—design, analysis, and interpretation of laboratory and clinical safety and efficacy studies of OTC and prescription, health and personal care product candidates

Immunology—cell mediated hypersensitivity and immunity—delayed contact hypersensitivity

Radiobiology/Radiopharmacology—use of state-of-the-art radioisotope techniques to establish pharmacologic, pharmacokinetic, metabolic, and mechanistic information for new drug candidates

Environmental Chemistry—analytical environmental chemistry, research in method development, environmental fate processes, and fate modeling

Enzymology—enzymatic applications to food and beverage products and processes

Endocrinology, Pharmacology, Physiology, Cell Biology—research on liposome-based drug delivery systems—mechanistic studies with cell culture systems and whole animal systems

Food Science—understanding and controlling structure and texture in fabricated food products—rheology, microscopy, heat and mass transfer

Gastrointestinal Science—research on gastrointestinal function and disorders

If you feel any of these positions match your abilities and future career goals, and if you want to work with a leader in the consumer packaged goods field, we'd like to hear from you.

Scientists with doctoral or postdoctoral training in appropriate disciplines are encouraged to send their resume, with publication list and an indication of the position of interest, to:

**Dr. Ted J. Logan, Manager
Ph.D. Recruiting
The Procter & Gamble Company
Miami Valley Laboratories
P.O. Box 39175
Cincinnati, OH 45247**

All candidates must have U.S. citizenship or permanent resident visa status.
AN EQUAL OPPORTUNITY EMPLOYER



POSITIONS OPEN

BIOLOGY. Sabbatical replacement for 1 year, 1985-1986, appointed at the assistant professor level. Duties include teaching of introductory genetics and two advanced courses in microbial genetics and microbiology. Requirements: Ph.D. and the ability to direct undergraduate research. Please send résumé and three references by 1 April 1985 to: **Dr. Jane K. Townsend, Department of Biological Sciences, Mount Holyoke College, South Hadley, Mass. 01075.** *Mount Holyoke College is an Equal Opportunity/Affirmative Action Employer and specifically invites and encourages applications from women and minorities.*

BIOMEDICAL ENGINEER. Kelsius, a new company developing real-time in vivo blood chemistry sensors, is seeking a bioengineer to join a multidisciplinary team to turn proven concepts in the field of fiber-optic chemical sensors into products. We are seeking a professional with an advanced degree in materials or biological sciences and specific experience in hospital environment and clinical testing. Knowledge of biocompatibility of materials relating to catheters would be helpful. Those candidates who feel they would thrive in the excitement of a new company should contact: **Ray Clarke, Technical Director, Kelsius, Inc., 957P Industrial Road, San Carlos, Calif. 94070; telephone: 415-594-1166.**

THE UNIVERSITY OF WESTERN ONTARIO CHAIRMAN DEPARTMENT OF PATHOLOGY

Applications are invited for the position of chairman of the Department of Pathology, The University of Western Ontario, London, Ontario, Canada. The department, actively involved in education, research, and service, consists of 29 faculty members (14 full-time), working in the Health Sciences Centre and the three major affiliated teaching hospitals in London. Basic and clinical research is carried out in several areas including the neurosciences, immunopathology, the cardiovascular field, and toxicology. This position requires an individual with strong leadership and administrative skills, a commitment to academic excellence and a distinguished record of research and teaching.

Applications and/or nominations should be sent by 1 April 1985 to:

**Dr. M. J. Hollenberg, Dean
Faculty of Medicine
The University of Western Ontario
London, Ontario, Canada N6A 5C1**

In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

The University of Western Ontario is an Equal Opportunity Employer.

LARKIN CHAIR PROFESSOR: ORGANIC CHEMISTRY

The Chemistry Department of the State University of New York at Buffalo seeks a vigorous and distinguished teacher-scholar of organic chemistry for a tenured appointment at the senior level. This position will be accompanied by concurrent appointment to the prestigious endowed **Larkin Chair in Chemistry**. Successful applicants must be able to demonstrate major scientific achievements and esteemed international stature. The person selected will be expected to provide a strong impetus in enhancing the research and teaching programs of the department as it seeks to further develop its level of excellence. Applications and nominations should be sent to: **Professor Joseph J. Tufariello, Chairman, Department of Chemistry, State University of New York at Buffalo, Buffalo, New York 14214, by 1 May 1985.** *The State University of New York at Buffalo is an Affirmative Action/Equal Opportunity Employer.*

The Department of Psychology of Duke University anticipates a period of growth and reorganization during the next 4 years. As part of this process we expect to add at least **FOUR FACULTY POSITIONS**. We now invite applications for two **junior tenure-track positions** in the general areas of learning and memory, and cognition, **broadly defined**. We seek applicants dedicated to scientific research, and also interested in teaching bright undergraduates. Excellence in research is our primary criterion. Send a comprehensive curriculum vitae, representative reprints/preprints, and the names of at least three referees to: **Dr. J. E. R. Staddon, Chairman, Department of Psychology, Duke University, Durham, N.C. 27706.** *Duke is an Equal Opportunity/Affirmative Action Employer.* Application deadline: 30 April 1985.

POSITIONS OPEN

BIOLOGY/MOLECULAR BIOLOGY. Ph.D. required in an area of molecular biology; EM experience; possible tenure-track; teaching at undergraduate level; research encouraged; new facilities. Apply to: **Dr. C. Harms, Department of Biology, Westminster College, New Wilmington, Pa. 16172.**

CHAIRMAN M/F DEPARTMENT OF PHARMACOLOGY TUFTS UNIVERSITY HEALTH SCIENCE CAMPUS

Tufts University is seeking an accomplished scientist to lead its new Department of Pharmacology. Candidates should have an outstanding record of research achievement; have the administrative skills needed to develop a leading academic department and be capable of playing a key role in the formulation of curriculum for the schools of Medicine, Dental Medicine, and Veterinary Medicine, as well as in the graduate programs of the Sackler School of Graduate Biomedical Sciences.

Tufts is an Affirmative Action institution and encourages the recruitment of women and members of minority groups. Nominations or applications with curriculum vitae should be sent to: **Dr. Joel D. Feinblatt, Dean for undergraduate medical education, Tufts University School of Medicine, 136 Harrison Ave., Boston, MA 02111.**

CLINICAL MICROBIOLOGIST. The Department of Laboratory Medicine, Children's Hospital National Medical Center, Washington, D.C., is seeking a **Director of Microbiology**. Candidates should possess an M.D. or Ph.D. degree with appropriate training in pathology or clinical microbiology and virology/infectious disease. The position carries a faculty position in the Department of Child Health and Development at George Washington University School of Medicine. Please send curriculum vitae to: **Physician Search, Personnel Department, Children's Hospital National Medical Center, 111 Michigan Avenue, NW, Washington, D.C. 20010.** *Equal Opportunity Employer.*

DIRECTOR, PRODUCT DEVELOPMENT. Small, growing, public biotechnology company has an immediate opening for a creative, motivated person to direct and perform new product development. Successful candidate should have proven track record with immunoassay product development in human and animal diagnostics. We offer a competitive compensation package. For confidential consideration, please send résumé with salary history and requirements to: **President, Genetic Diagnostics Corporation, 160 Community Drive, Great Neck, N.Y. 11021.**

DIRECTOR COMPREHENSIVE CANCER CENTER OF METROPOLITAN DETROIT

The Comprehensive Cancer Center of Metropolitan Detroit is seeking a director to develop, coordinate, and manage the interinstitutional cancer research programs of Wayne State University, the Michigan Cancer Foundation, and the Detroit Medical Center affiliate hospitals and institutions. Programs involve a large patient population and significant research space supported by more than \$15 million. Candidates will have proven administrative leadership experience, and a demonstrated record of success in clinical and/or basic cancer research. Applications should be received by 1 June 1985.

Send curriculum vitae to:

**Sam C. Brooks, Ph.D.
Chairman, Search Committee
Michigan Cancer Foundation
Room 208
110 East Warren Avenue
Detroit, Michigan 48201**

The Comprehensive Cancer Center of Metropolitan Detroit is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

The **INSTITUTE FOR ENZYME RESEARCH** at the **UNIVERSITY OF WISCONSIN-MADISON** has an opening for a **CHAIRPERSON** of one of its five sections. The position is at the associate professor or, for an exceptionally gifted younger investigator, at the assistant professor level and provides a joint (one-half time) appointment with the Laboratory of Genetics. (The present section chairmen are members of the Department of Biochemistry.) The duties involve basic research and training of postdoctoral associates at the Institute and participation in the activities of the Genetics Laboratory. The latter will include teaching, predoctoral research training, and committee service commensurate with the share of the appointment in that unit. Candidates are expected to have demonstrable records of accomplishment in independent, original research, to have shown ability in leading and supervising research groups, and to have established reputations in their fields of research. Because of the present balance of research interests and activities on the campus, preference will be given to candidates experienced and active in molecular genetics of protein structure and function.

To ensure consideration, an application should be submitted before 29 March 1985 to: **Professor Millard Susman, Chairman, Laboratory of Genetics, 445 Henry Mall, Madison, Wisconsin 53706.** *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

COLLEGE TEACHER OF COMPUTER SCIENCE AND MATHEMATICS. Tenure-track appointment in computer science and mathematics available September 1985. Requirements: Ph.D. preferred; master's degree in computer science or mathematics required; ability to teach upper-division courses in computer science and mathematics; willingness to work with students on CST computer equipment (DEC PDP/11 and IBM PC's). Send résumé to: **Dr. Susan Smith Batell, Dean of Academic Affairs, College of Saint Teresa, Winona, Minnesota 55987.** *Minorities and women encouraged to apply. An Equal Opportunity/Affirmative Action Employer.*

DIRECTOR CENTER FOR THE ANALYSIS AND SYNTHESIS OF MACROMOLECULES

The director will head a core laboratory containing state-of-the-art instrumentation for the gas phase protein sequencing, peptide and oligonucleotide synthesis, amino acid analysis, and HPLC. The director will supervise technical staff and provide analytical and synthetic capabilities and technical expertise to investigators in the life sciences at Stony Brook. Qualifications include a Ph.D. in biochemistry sequencing or peptide and oligonucleotide synthesis. This position carries a faculty appointment at a level commensurate with experience. Inquiries should be directed to: **Dr. David Williams, Department of Pharmacological Sciences, Health Sciences Center, State University of New York (SUNY) Stony Brook, Stony Brook, N.Y. 11794.** *SUNY, Stony Brook, is an Affirmative Action/Equal Opportunity Educator and Employer.* AK Number 31-85.

INSTRUCTOR OR ASSISTANT PROFESSOR OF ANATOMY. The Department of Anatomy at the Medical College of Ohio wishes to make two tenure-track appointments by July 1985 to individuals with earned doctorates (Ph.D./M.D.) and with research experience in cell or molecular biology. Postdoctoral training will enhance the probability of appointment. Applicants are expected to have a demonstrated ability to conduct independent, fundable research, preferably applying modern techniques of biochemistry, immunology, or genetics. Candidates will be expected to have a demonstrated teaching ability in anatomy, especially gross anatomy, and to share fully in the departmental teaching programs for medical and graduate students. Salary is commensurate with qualifications. Interested persons should send curriculum vitae, statement of teaching and research interests and goals, and the names and addresses of three references by 1 April 1985 to: **Dr. Richard A. Yeasting, Search Committee Chairman, Department of Anatomy, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.** *An Equal Opportunity Employer.*

Centocor, Inc. is a rapidly growing company devoted to creating new and unique products by utilizing emerging biotechnologies. Current research programs are focused on applying hybridoma and recombinant DNA methodologies in the development of diagnostic and therapeutic reagents for use in the areas of cancer, immunoregulation and infectious disease. Positions are available for well qualified individuals at the staff scientist and technical levels in the following categories:

MOLECULAR BIOLOGY—gene cloning and expression, eukaryotic gene expression, DNA chemistry, tumor virology and oncogene research.

BIOCHEMISTRY—determination of glycoprotein and polysaccharide structure, carbohydrate chemistry, standard lipid and protein techniques.

SENIOR PRODUCT DEVELOPMENT SCIENTISTS—Ph.D. preferably with experience in cell culture techniques, antibody purification and characterization, and development of novel diagnostic and therapeutic products.

Centocor offers attractive salaries and benefits, exceptional working conditions and a pleasant location in suburban Philadelphia.

CENTOCOR, INC.

Ms. S. Faragalli
Director of Personnel
244 Great Valley Parkway
Malvern, Pennsylvania 19355

SCIENTIST/PROJECT SCIENTIST

Ph.D. in Physical Chemistry or closely related area. An undergraduate degree in engineering or a curriculum where the candidate received training in fluid dynamics and heat transfer analysis is preferred, plus at least two years of work experience in an aerosol physics related field. Will perform experimental measurements of the hygroscopic growth rates of particulate matter of health effects concern. Will be responsible for constructing a laboratory system in which the fluid dynamics and environment (temperature and relative humidity) of the human respiratory tract are simulated. Will operate instrumentation necessary to generate and characterize the monodisperse aerosols upon which the hygroscopic measurements will be conducted. A candidate familiar with laboratory equipment common to aerosol science investigations is preferred. Typical devices are monodisperse aerosol generators (spinning top and/or vibrating orifice instruments), and optical particle-sizing instruments, and associated electronic equipment (multi-channel analyzer). The research may involve the use of a laser particle sizing system. This may involve the development of such a system if commercially available instrumentation is not suitable. Send salary history and present salary required in confidence to:

Glenda W. Jahtaniah
NORTHROP SERVICES, INC.
P.O. Box 12313
Research Triangle Park, NC 27709

An Equal Opportunity Employer

Research Associates

Integrated Genetics of Framingham, Massachusetts is a leading biotechnology firm specializing in the health care field with emphasis on DNA probe diagnostic technology and production of complex therapeutic proteins. We have openings for Research Associates with B.S./M.S. and 2-4 years experience in the following areas:

Molecular Biology

- Duties will include planning, performing and evaluating experiments using recombinant DNA technology. Experience in cDNA cloning, southern and northern blotting techniques, vector construction and related technology is preferred.

Protein Chemistry

- Duties include developing and performing assays and monoclonal antibody production.
- Purification and characterization of recombinant therapeutic proteins. Experience in chromatography and protein chemistry is required.

Mammalian Expression

- Research experience in the field of regulation of eukaryotic gene expression. Familiar with recombinant DNA techniques hybridization, isolation of RNA and DNA, northern and southern blotting, electrophoresis—RNA, DNA and protein tissue culture techniques.

Technology Transfer

- Assist in the investigation of process variables associated with the scale-up of the production and purification of therapeutic proteins.

Integrated Genetics offers an attractive compensation and benefits package. Please meet with us at the ASM or forward your resume to:

Elaine Rosenberg,
Director of Human Resources
Integrated Genetics, Inc.
Dept. S-38
31 New York Avenue
Framingham, MA 01701

INTEGRATED
LG GENETICS

An equal opportunity employer

POSITIONS OPEN

DIRECTOR OF RESEARCH & DEVELOPMENT

Originate new project ideas in electrophysiology and neurophysiology applications. Implement research and coordinate development of new products. Must have 4 years of experience in software development as related to neurophysiological signal processing. Forty hours per week; 8 to 5, Monday thru Friday. Salary: \$57,000 per year. Education and training: Ph.D. in electrical engineering or electrophysiology; 4 years of experience required in electrophysiological (neurological) research. Mail application and résumé to:

Job Service
P.O. Box 7943
Madison, Wis. 53707
Attention: Eileen Breitweiser
This ad not paid for by Job Service funds.

ENVIRONMENTAL LABORATORY SCIENTIST with broad background and experience sought to help develop a new laboratory program in the Environmental Health Sciences. The applicant sought will have a doctoral degree in some branch of chemistry and a minimum of 15 years of experience. The selectee's background will include productive experience in: teaching, preferably in both a medical school and in a chemistry department in a school of sciences in a university; industrial research (preferably in an area of biochemistry); in consulting, preferably biological effects in the environment; and in management of a research group in academic, state or federal laboratories concerned with research on human health effects. Among the areas of teaching and research experience the applicant must demonstrate work in pharmacology, biochemistry, and toxicology preferably concerning environmental pollutants. Development of methodologies in the pertinent areas, as evidenced by publications, is essential and clinical chemical laboratory direction is highly desirable.

The successful applicant will help develop a new program to assure scientific competency and develop managerial skills in aspirants who desire to become managers of laboratories concerned with environmental health. This is a tenure-track position open to any qualified person and is at the level of associate/assistant professor. Send curriculum vitae, reprints of major work, and three letters of recommendation by 22 March 1985 to: **Dr. Richard J. Thompson, Chairman, Search Committee, School of Public Health, University of Alabama at Birmingham, Birmingham, Alabama 35294. An Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION IN NUTRITION/FOOD POLICY AND PLANNING

The Department of Nutritional Sciences, University of California, Berkeley, invites applications for a faculty appointment in nutrition/food policy and planning. The tenure-track position is open at the assistant, associate, or full professor level. The applicant must hold a Ph.D. (or equivalent) degree in nutrition or an equivalent field with experience or training in public policy, nutritional anthropology, economics or political science. The appointee is expected to develop an academic and research program in the department concerned with food systems and distribution and the nutritional state of people, from the point of view of policy analysis at national and international levels. The program will provide a nutritional focus within other ongoing campus activities in nutrition/food policy in agricultural economics, public health, health policy, and international studies. The position will be available fall semester 1985, or soon thereafter. To apply, please send curriculum vitae, bibliography, statement of research and teaching interests, and the names of five referees who may be contacted. Apply to: **Dr. Janet C. King, Chair, Nutrition/Food Policy and Planning Search Committee, Department of Nutritional Sciences, University of California, Berkeley, Calif. 94720. Application deadline: 1 May 1985 or until position is filled. Salary: commensurate with qualifications.**

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

POSITIONS OPEN

GEORGETOWN UNIVERSITY, CHEMISTRY DEPARTMENT, announces a **FACULTY POSITION IN BIOTECHNOLOGY** starting 19 August 1985. Applications are invited from biochemists and biologically oriented analytical chemists with demonstrated research achievement, and interest in teaching both graduates and undergraduates. Initial 1-year appointment with anticipated conversion to tenure-track. Senior scientists on leave will be considered for a 1-year appointment. A résumé, copies of selected publications, a research plan, and names and addresses of three references should be sent to: **Professor Joseph E. Earley, Chairman, Department of Chemistry, Georgetown University, Washington, D.C. 20057. Georgetown is an Equal Opportunity/Affirmative Action Employer.**

UNIVERSITY OF CALIFORNIA Cooperative Extension

4-H Specialist—Program Development, Science and Technology, Career Exploration Berkeley Campus

An academic, career-track appointment, subject to administrative review of position and incumbent's performance prior to end of 3-year period.

Serve as member of the State 4-H Youth Staff to provide statewide leadership in development and maintenance of science and technology education programs for California's youth, and develop youth career exploration programs. Assist in development of statewide policies, procedures, and programs. Assure affirmative action in development and delivery of programs. Graduate education in science education, natural science, biology, natural resources, environmental studies, home economics, or closely related field plus experience. Salary in associate level rank. Contact: **Cooperative Extension Personnel, University of California, Berkeley, Calif. 94720. Telephone: 415-644-4320. Closes 17 May 1985. Refer to Number A-84-223.**

Affirmative Action/Equal Opportunity Employer, M/F/H

GLYCOPROTEIN BIOCHEMIST—RESEARCH ASSOCIATE

Dedicated individual, sought for research into glycolipid storage diseases. Qualified applicant must have Ph.D. in biochemistry or equivalent. Must have wide experience in glycoprotein/glycolipid research including purification and characterization of proteins, preparative and analytical. HPLC methods, chemical and enzymatic protein modification, and tissue culture/animal models for glycolipid storage diseases. Management experience, strong publication record in this area essential.

Apply by 30 March 1985 to: **National Gaucher Foundation, 1424 K Street, NW, 4th Floor, Washington, D.C. 20005.**

Two experienced individuals to fill the positions of **GRAPHICS SPECIALIST** and **SENIOR TECHNICAL SYSTEMS ANALYST**. Both require a B.S. in computer science or equivalent, a strong mathematics background and 3 to 5 years of experience in the respective functional areas. The **GRAPHICS SPECIALIST** serves as a liaison to the scientific/research community and is responsible for analyzing hardware/software problems and effecting solutions. Knowledge of Fortran and Tektronix graphics and mini/micro interface is required. The **SENIOR TECHNICAL SYSTEMS ANALYST** provides technical support to operations and is responsible for analyzing hardware, system performance monitoring, and on-line instrument as well as micro/mini hardware interfaces. Experience with MUMPS operating systems is desirable. Forward résumé and salary requirements to: **Brant A. Elkind, Assistant Manager, Placement Services, University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, Mass. 01605. An Affirmative Action/Equal Opportunity Employer.**

INSTRUCTORSHIP IN BIOCHEMISTRY. Anticipated nontenure-track position available with a starting date of 1 September 1985. Major responsibility will be in administering and teaching a two-quarter sequence of a laboratory course in undergraduate biochemistry. Participation in an ongoing research program is possible. Minimum requirements are a M.S. in biochemistry, chemistry, or closely related area and an interest in teaching. Qualified individuals should send letter of application, curriculum vitae, and names of three references to: **T. W. Keenan, Department of Biochemistry and Nutrition, Virginia Tech, Blacksburg, Va. 24061. Virginia Tech is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

ECOSYSTEM SCIENTIST

The Department of Landscape Architecture and Regional Planning seeks a Ph.D. with teaching ability in ecology and some background in either soil science or hydrology. The appointment will be a 9-month, tenure-track position at the **assistant professor** level. Willingness to instruct landscape architecture and regional planning students in field sciences is a must. Opportunity exists for collaborative research in biogeochemistry; research interest in this area is desirable. Please submit curriculum vitae, a summary of research interests, and names of three references by 25 March to: **Dr. Arthur H. Johnson, Department of Landscape Architecture and Regional Planning-GSFA, University of Pennsylvania, Philadelphia, Pennsylvania 19104.**

CENTER FOR MOLECULAR GENETICS AND BIOTECHNOLOGY THE WAKSMAN INSTITUTE OF MICROBIOLOGY RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

FACULTY POSITIONS IN PLANT MOLECULAR BIOLOGY. Positions available in expanding program in molecular genetics and biotechnology. Candidates should have experience in **GENETIC MOBILE ELEMENTS** or **REGULATION OF GENE EXPRESSION IN NUCLEAR-ORGANELLE INTERACTION.**

The Waksman Institute is an established, rapidly expanding research facility with a newly constructed laboratory complex that is part of a major land-grant university centrally located in the New York-Princeton-Philadelphia corridor. Institute programs of research and instruction operate in collaboration with allied interests in academic departments of the university, an adjacent medical school, and a nearby College of Agriculture and Environmental Sciences. Rank and salary are competitive and commensurate with credentials; senior researchers are encouraged to apply and a qualified candidate may assume a shared responsibility in administration for developing molecular biology at Rutgers. Please send a statement of interest and research plans, curriculum vitae, and references to: **Dr. Joachim Messing, The Waksman Institute of Microbiology, Busch Campus, Rutgers University, P.O. Box 759, Piscataway, New Jersey 08854-0759. Deadline: 30 April.**

An Equal Opportunity/Affirmative Action Employer

MICROBIAL GENETICS DEVELOPMENTAL MICROBIOLOGY METHANOGENESIS

POSTDOCTORAL POSITIONS available to study development in the myxobacterium *Myxococcus xanthus* and *methanogenesis* in the archaeobacterium *Methanococcus voltae* using biochemistry and molecular genetics. Specific research problems with *Myxococcus* include: Regulation of gene expression during development, control of cell behavior by cell-cell interactions, and mechanism of cell cohesion. Specific research problems in *methanogenesis* include: structural analysis of plasmids, developing a transformation system, and isolation of conditional mutants. Candidates with experience in molecular biology, microbial genetics, biochemistry, or microbial physiology are preferred. Send curriculum vitae and names of four references to: **Shimkets/Whitman, Department of Microbiology, University of Georgia, Athens, Ga. 30602.**

The University of Georgia is an Equal Opportunity/Affirmative Action Institution.

NUTRITIONAL BIOCHEMIST (Assistant/Associate Professor—60 Percent Research—40 Percent Teaching)

Major responsibilities: develop a research program related to the nutritional biochemistry of domestic animals with specific emphasis on the utilization of nutrients in forages. Teach undergraduate-graduate level courses. Qualifications: Ph.D. in biochemistry, nutrition, or animal science with specialized training in intermediary metabolism and biochemical techniques. Practical knowledge of animal production preferred. Applications accepted to 31 March 1985. Submit letter of application, résumé, transcripts, and at least three letters of reference to:

Dr. D. L. Cross, Chairman Search Committee Department of Animal Science Clemson University Clemson, S.C. 29631 Telephone: 803-656-3426

Bioengineering Faculty Position

THE PENNSYLVANIA STATE UNIVERSITY is seeking an Assistant or Associate Professor in Bioengineering beginning Fall, 1985.

This person must have a PhD in Bioengineering or the equivalent. The research field is open but we are particularly interested in someone with a strong background in the pulmonary area.

Successful applicant will be expected to work primarily at the University's Hershey Medical Center in cooperation with the College of Medicine faculty, and to develop an area of research, supervise graduate students and participate in teaching at the graduate level.

Apply to: **Dr. David B. Geselowitz, Head Bioengineering Program, 218 EE West Bldg., Dept. SM 10, University Park, PA 16802.** Closing date **April 15, 1985** or until a suitable candidate is identified.

An Equal Opportunity/
Affirmative Action Employer, M/F

Millipore, a Fortune 1000 international corporation, is a world leader in the field of Separations Technology—products and processes needed in the analysis and purification of fluids. Our Millipore Products Division, located in Bedford, MA, currently has an outstanding opportunity available in the Research and Development Department that offers excellent exposure and advancement opportunity.

SR RESEARCH SCIENTIST/BIOCHEMIST

The Millipore Products Division Research and Development group seeks a proven professional to direct research on new products used for the separation of biomolecules. The successful candidate will direct 3-4 technicians involved in developing technology and unique products that use affinity and size to separate protein and nucleic acids. In this highly visible position, you will also write research proposals focusing on utilizing the technology to develop products for targeted applications.

The ideal candidate will be a problem-solver with a solid grasp of how separations technology can be used to meet customer needs. Ph.D. degree in Biochemistry, Physical Biochemistry, or a related field, and 1-3 years' industrial experience required. Excellent oral and written communications skills are essential to facilitate interaction with Sales, Marketing, Applications and other groups. Experience with membrane systems for use in the separation of biomolecules would be a plus.

Interested candidates should forward resume with salary history to the Employment Manager, Millipore Corporation, 80 Ashby Road, Bedford, MA 01730.

An Equal Opportunity Employer M/F/H/V

MILLIPORE

Millipore Products Division

CENTER FOR MOLECULAR MEDICINE AND IMMUNOLOGY

Several senior and junior level research positions are available at the CENTER FOR MOLECULAR MEDICINE AND IMMUNOLOGY, affiliated with the University of Medicine and Dentistry of New Jersey at Newark, and consisting of the following INSTITUTES:

INSTITUTE FOR MOLECULAR GENETICS

Directorship open, as well as senior and junior scientist positions. Experienced and grant-successful individuals with interest in oncogenes and related problems desired.

INSTITUTE FOR IMMUNOBIOLOGY

Directorship open, as well as senior and junior scientist positions. Experienced and grant-successful individuals with interest in tumor immunity and biology desired.

INSTITUTE FOR MOLECULAR IMMUNOLOGY

Senior and junior scientist positions open. Experienced and grant-successful individuals with interest in tumor antigen immunochimistry, tumor imaging, and tumor therapy research desired.

POSTDOCTORAL POSITIONS available within the Molecular Immunology Institute for individuals with experience in one or more of the following areas: immunochemistry, glycoprotein chemistry, radiochemistry, and protein-labeling techniques.

INSTITUTE FOR NUCLEAR MEDICINE

Senior and junior scientist positions available for individuals with experience in radiochemistry and protein chemistry.

Salary commensurate with experience and credentials. Eligibility for adjunct faculty appointment. Send resume and names of references to:

David M. Goldenberg, Sc.D., M.D., President
CENTER FOR MOLECULAR MEDICINE AND IMMUNOLOGY
University of Medicine and Dentistry of New Jersey
100 Bergen Street
Newark, N.J. 07103

Equal Opportunity Employer

Research and Development Opportunities



American Dade, a recognized leader in the field of clinical laboratory medicine, has exceptional opportunities for Scientists in our Research and Development Departments. The people we seek must be results-oriented and capable of working as part of an aggressive product development team. Opportunities are available at all levels for skilled scientists to work in new product development. Positions include:

Organic Chemists

Positions require 3-5 years experience in synthetic organic chemistry, familiarity with peptide chemistry, experience with protein-hapten/protein-protein coupling techniques highly desirable. Ideal candidates will possess advanced degree in organic chemistry or biochemistry (Ph.D. preferred) and previous industrial experience.

Immunochemists

Requires 3-5 years practical work experience in immunoassay test development with emphasis in enzyme labeling of antibodies. Enzymology/immunology background preferred. Ideal candidate will possess advanced degree in immunology, chemistry or biochemistry, computer experience and experience in reagent formulation development.

We offer a challenging career opportunity, an excellent salary program, plus a superior benefits package. For confidential consideration send resume including salary history to: Ray Angele, Director - Professional Staffing.

American Dade

Division of
American Hospital Supply Corporation
P.O. Box 520672
Miami FL USA 33152

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POSITIONS OPEN

SABBATICAL LEAVE REPLACEMENT

Hobart and William Smith Colleges seek a **GEOLOGIST OR GEOPHYSICIST** for the 1985/1986 academic year to teach both introductory and advanced-level courses. The position requires someone with broad interests. *Women and minorities are encouraged to apply.* Deadline for applications: 31 March 1985. Contact: **Donald L. Woodrow, Department of Geoscience, Hobart and William Smith Colleges, Geneva, N.Y. 14456.** Telephone: 315-789-5500, extension 215.

The Department of Chemistry of The University of Chicago invites applications for the position of **LECTURER IN ORGANIC CHEMISTRY**. This non-tenure-track academic position will carry responsibility for the management and supervision of the undergraduate organic chemistry laboratories. It is expected that this person (with a Ph.D. in organic chemistry) will take an active part in the design of laboratory curriculum and experiments.

Qualified applicants should submit curriculum vitae and publication list, and should arrange for two or more letters of recommendation to be sent to:

Professor Donald H. Levy
Chairman, Department of Chemistry
The University of Chicago
5735 South Ellis Avenue
Chicago, Illinois 60637

An Equal Opportunity/Affirmative Action Employer

MOLECULAR NEUROBIOLOGIST

The Institute of Animal Behavior, Rutgers-The State University of New Jersey (Newark campus), invites applications for a tenure-track appointment (assistant professor level preferred). We are particularly interested in scientists using current molecular biological techniques to study neurotransmitters and neuropeptides in relation to behavioral regulation. Opportunities exist for extensive collaboration within the Institute of Animal Behavior, with Chemistry and Zoology Department members, and with members of the Neuroscience Program of the University of Medicine and Dentistry of New Jersey who form the core of an emerging Molecular and Behavioral Neuroscience Center. Applicants should submit curriculum vitae, names and addresses of three references, and a brief statement of research plans to: **Jay S. Rosenblatt, Director, Institute of Animal Behavior, Rutgers-The State University of New Jersey, 101 Warren Street, Newark, New Jersey 07102.** *Rutgers University is an Equal Opportunity/Affirmative Action Employer.*

MEMORIAL SLOAN-KETTERING CANCER CENTER Professional Position in NUCLEAR MAGNETIC RESONANCE RESEARCH

A senior position for a physicist has been established in Memorial Hospital in connection with the initiation of a magnetic resonance imaging (MRI) program. A 1.5/2.0 Tesla total body imaging and spectroscopy unit is the first system to be installed in a new building, to be followed by other imaging units, and a high field small bore spectroscopy unit. An extensive clinical research as well as in vivo spectroscopy program is planned. Applicants should have a Ph.D. and have had substantial experience with nuclear magnetic resonance studies and a productive research record. Experience with both imaging and spectroscopy applications is desirable. Excellent opportunity for collaboration with other research and clinical staff, with extensive associated electronics, computer, and instrumentation resources.

Memorial Sloan-Kettering Cancer Center is an Equal Opportunity Employer. Inquiries should be addressed to:

Dr. John S. Laughlin
Department of Medical Physics
Memorial Sloan-Kettering Cancer Center
1275 York Avenue
New York, N.Y. 10021

POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS (TWO) available immediately. Recent Ph.D. in immunology with expertise in the application of hybridoma technology and cell culture. Second position for recent Ph.D. in biochemistry preferred to work on biochemistry and immunology of nervous system antigens. Salary: \$19,000 to start. Send curriculum vitae and names of three references to: **Dr. Terry Joe Sprinkle, VA Medical Center, Research Service (151), Neurochemistry Laboratories, Augusta, Ga. 30910.** J2592. *Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

PATHOLOGIST—The University of Michigan Medical School, Department of Pathology, is seeking a pathologist (Board-certified or -eligible) in anatomic and clinical pathology for an academic position that will involve responsibility for service activities in the Anatomic and Clinical Pathology Laboratories. An interest and training in neuropathology and research and teaching related to medical students, fellows, and house officer staff is preferred. Candidates should contact: **Peter A. Ward, M.D., Professor and Chairman, Department of Pathology, University of Michigan Medical School, 1315 Catherine Road, Ann Arbor, Mich. 48109;** telephone: 313-763-6384.

Ph.D. IN PHARMACOLOGY OR PHYSIOLOGY with 2 to 3 years of postdoctoral training in cellular cardiac electrophysiology, including experience with conventional/ion-selective microelectrodes and multicellular voltage-clamp or patch-clamp techniques, to join active research group based in medicine/pharmacology with current interests centering on the cellular electrophysiology and pharmacology of human cardiac tissues and of animal models of ischemia/disease/dysrhythmia, including investigations of: (i) mechanisms of low resting potential; (ii) electrogenic sodium pumping in specimens of human atrium and ventricle; (iii) actions of selected cardioactive drugs and ions, particularly antiarrhythmic and cardiotonic agents; and (iv) uses of monophasic action potential recordings to monitor in vivo drug activity and dysrhythmia. In addition to developing a strong personal research program, responsibilities include laboratory supervision, working with pre- and post-doctoral trainees and teaching. Tenure-track appointment possible (assistant professor). Salary commensurate with experience/training. Please send statement of research interests, curriculum vitae, and references to: **Donald H. Singer, M.D., c/o Reingold ECG Center, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Illinois 60611.**

PLANT COMMUNITY ECOLOGIST—Botany Department seeks an ecologist to fill a tenure-track, assistant professor position starting January or September 1986. We seek broadly trained candidates skilled in quantitative and/or field experimental studies of plant communities, and committed to both teaching and research. Postdoctoral experience preferred. Submit curriculum vitae, three letters of reference, and a statement of research goals by 1 April to: **Dr. D. M. Waller, Ecologist Search Committee, Department of Botany, University of Wisconsin-Madison, Madison, Wis. 53706.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOWS IN MOLECULAR GENETICS/PROTEIN CHEMISTRY

To study peptide hormone receptors toward understanding the mechanism of signal transduction in hormone action. Projects include (i) preparation and use of domain specific antibodies; (ii) construction and expression of receptor genes; (iii) functional studies on purified receptors; and (iv) reconstitution of receptors and other cellular components into liposomes. Experience in recombinant DNA, protein chemistry, or immunochemistry is required. Send curriculum vitae and names and addresses of three references to:

Yoko Fujita-Yamaguchi, Ph.D.
Department of Molecular Genetics
Beckman Research Institute of the City of Hope
140 East Duarte Road
Duarte, Calif. 91010

POSTDOCTORAL POSITIONS (TWO) available immediately for recent Ph.D.'s to join active research group based in medicine/pharmacology in studies on the cellular electrophysiology and pharmacology of human cardiac tissues and of animal models of ischemia/disease/dysrhythmia. Current interests include investigations of: (i) basic mechanisms underlying low resting potential in specimens of human atrium and ventricle; (ii) electrogenic sodium pumping; (iii) electrophysiologic actions of selected cardioactive drugs and ions, particularly antiarrhythmic and cardiotonic agents; and (iv) uses of monophasic action potential recordings to monitor in vivo drug activity and dysrhythmia. Experience with conventional cellular cardiac electrophysiological techniques required. Ion-selective microelectrode, multicellular voltage-clamp and/or patch clamp experience also desirable. Please send statement of research interests, curriculum vitae, and references to: **Donald H. Singer, M.D., c/o Reingold ECG Center, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Ill. 60611.**

POSITIONS OPEN

PLANT MOLECULAR BIOLOGIST/BIOCHEMIST/NOLOGIST. The Department of Plant Pathology and Crop Physiology, Louisiana State University, is searching for a faculty member at the assistant professor level to conduct research aimed at developing cellular and molecular approaches for plant improvement with emphasis on plant-pathogen interactions. Strategies of interest include protoplast fusion, haploid culture, and/or genetic engineering techniques. Program development is expected to follow interests of the successful candidate, and basic as well as applied investigations will be encouraged. Teaching a graduate level course and advising graduate students will be encouraged. Applicants must have a Ph.D. with emphasis in plant physiology, plant pathology, and/or biochemistry. Application deadline: 1 May 1985, or until suitable candidate is found. This tenure-track appointment is available 1 July 1985. To apply, a résumé, transcripts, a statement of your research interests, and three letters of reference should be sent to: **Dr. Lowell L. Black, Chairman of the Search Committee, Department of Plant Pathology and Crop Physiology, Louisiana State University, 302 Life Sciences Building, Baton Rouge, Louisiana 70803;** telephone: 504-388-1464. *Louisiana State University is an Equal Opportunity/Affirmative Action Employer.*

WRIGHT STATE UNIVERSITY SCHOOL OF MEDICINE, POSTDOCTORAL FELLOW. Position available immediately to participate in research project examining hepatic fatty acid and choline metabolism. The position concerns ligand binding and enzymatic studies. Prior experience in protein purification and characterization, as well as with lipids is highly desirable. Background should include familiarity with radioisotopes and hepatic intermediary metabolism. Salary is commensurate with experience, minimum of \$16,000. Send curriculum vitae and names of two references to: **Dr. Dietmar V. Trulzsch, Chief, Clinical Gastroenterology, Veterans Administration Medical Center, 4100 West Third Street, Dayton, Ohio 45428.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION now open for recent Ph.D. to study the cytoskeleton (microtubules and filaments) in normal/diseased cell states (cell and molecular biology, biophysics). Experience is desirable in protein- and immuno-(+monoclonal) chemistry, molecular biology, or light/electron microscopy. Send résumé and three letters of reference to: **Dr. Richard Linck, Department of Anatomy, University of Minnesota, 321 Church Street, Minneapolis, Minn. 55455.**

POSTDOCTORAL POSITIONS IN NEUROBIOLOGY OF MEMORY. Will participate in pharmacological studies of learning and memory, including neuroendocrine roles in memory storage and retrieval, kindling, long-term potentiation, and age-related memory deficits. To begin approximately 1 September 1985. Send curriculum vitae and names of three references to: **Dr. Paul E. Gold, Department of Psychology, Gilmer Hall, University of Virginia, Charlottesville, Va. 22901.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available now to study monoclonal antibody and carbohydrate hybridization probe specificity for functionally important parts of plant and bacterial polysaccharides. Carbohydrate chemistry or carbohydrate immunology experience preferred. Minimum salary: \$19,212. Send résumé and names of three references to: **Dr. V. Vreeland, Botany Department, University of California, Berkeley, Calif. 94720;** telephone: 415-642-5679. *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE—A postdoctoral position to study mechanisms and applications of secondary ion mass spectrometry and field desorption mass spectrometry related to biological macromolecules is available. Ph.D. in organic chemistry, bio-organic chemistry, or biochemistry is required. Research experience in mass spectrometry, particularly in the area of secondary ion mass spectrometry and/or field desorption mass spectrometry, and experience in separation techniques by high pressure liquid chromatography are desirable. Salary range: \$16,000 to \$18,000, depending on experience and qualifications. Send curriculum vitae and three letters of recommendation by 31 March 1985 to: **Dr. Douglas Barofsky and Dr. Max Deinzer, Department of Agricultural Chemistry, Oregon State University, Corvallis, Oregon 97331.** *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

POSITIONS OPEN

POSTDOCTORAL FELLOW. Biochemist/organic chemist with strong interest in mechanisms of chemical carcinogenesis. Well-equipped facility in mid-Westchester County offers good advancement opportunity for the qualified and motivated candidate. Send résumé and names of two references to: **Dr. E. S. Fiala, Chief, Division of Molecular Biology and Pharmacology, Naylor Dana Institute, Valhalla, N.Y. 10595. Equal Opportunity Employer.**

POSTDOCTORAL FELLOW position available in laboratory working on the molecular biology of cell proliferation. Only U.S. citizens or residents may apply (training grant). Send curriculum vitae to: **Dr. Renato Baserga, Chairman, Department of Pathology, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, Pa. 19140. Equal Opportunity Employer.**

POSTDOCTORAL POSITION—To study hormonal and genetic regulation of steroid hormone biosynthesis. Ph.D. in cellular and molecular biology or biochemistry or related field required. Experience with protein purification, cell-free translation, and immunologic techniques preferred. Send curriculum vitae and names of three references to: **Dr. Anita H. Payne, Departments of Obstetrics and Gynecology and Biological Chemistry, University of Michigan, Ann Arbor, Mich. 48109.**

POSTDOCTORAL RESEARCH ASSOCIATE

The Human Genetics Center, University of Nebraska Medical Center, has an immediate opening for a Ph.D. in molecular biology or in cytogenetics. Applicants must have experience in modern molecular biology techniques and/or human cytogenetics. Will have own laboratory and will work on collaborative studies with the Human Genetics Center and the Eppley Cancer Institute. Will utilize modern molecular biology techniques in conducting research on the mapping and isolation of human genes. Salary is negotiable. Send curriculum vitae, transcripts, and three letters of support to: **Warren Sanger, Ph.D., Center for Human Genetics, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, Nebraska 68105. An Equal Opportunity/Affirmative Action Employer.**

NATIONAL SCIENCE FOUNDATION Washington, D.C.

DIVISION OF MATERIALS RESEARCH

The Directorate for Mathematical and Physical Sciences is seeking qualified applicants for the position of Head, Condensed Matter Sciences Section, Division of Materials Research. This position is in the Senior Executive Service with a salary ranging from \$61,296 (ES-1) to \$68,700 (ES-4). Appointment may be on either a career or a one to three-year rotational basis. Applicants must have a Ph.D. or equivalent professional experience in physics, chemistry, or related disciplines; substantial research experience and strong evidence of scholarship in condensed matter physics or solid state chemistry, as evidenced in publications, or innovative leadership in research administration; and ability to achieve organizational objectives through the supervision and management of subordinates.

Applicants should contact Margaret Cademartori on 202-357-7857 (hearing impaired individuals may call TDD 202-357-7492) to request announcement EPS 85-25 (career appointment) or announcement EPS 85-125 (limited term appointment). Announcements contain complete qualification requirements and application procedures. Applications must be received by April 5, 1985.

Equal Opportunity Employer

POSITIONS OPEN

An exciting opportunity is available for a **Ph.D. to study the immunoregulatory mechanisms of a unique serum lipoprotein associated with hepatitis B virus infection.** Candidates should have experience with lipoprotein isolation and purification in addition to a strong background in cellular immunology. Submit curriculum vitae and statement of research aims to: **Robert Perrillo, M.D., VA Medical Center, 915 North Grand Boulevard, St. Louis, Mo. 63125. Telephone: 314-652-4100, extension 504. The VA is an Equal Opportunity Employer.**

POSTDOCTORAL ASSOCIATE to work on development and testing of new agents for diagnosis and therapy of chemically induced tumors in nonhuman primates. Applicants require a minimum of 3 years of experience in metabolism, toxicology, and carcinogenicity of chemicals and experience with diagnosis and therapy of tumors in rodents and primates. Send curriculum vitae to: **Michael Mackert, Hazleton Laboratories America Inc., 9200 Leesburg Turnpike, Vienna, Va. 22180. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION available in a clinical immunology laboratory to study the ontogeny of the immune response with special emphasis on the relationship between differentiation and cancer. Minimum qualifications are a Ph.D. degree with a background in either immunology, biochemistry, cell or molecular biology. Funding starts 1 July 1985. Please send résumé, statement of research interests, and names of three references to: **Dr. Florence Hofman, Department of Pathology, University of Southern California, Los Angeles, Calif. 90033.**

POSTDOCTORAL POSITION IN MOLECULAR NEUROBIOLOGY available to study the molecular biology of mutants in *Drosophila* affecting the voltage-sensitive sodium channel. Candidates should have experience in recombinant DNA technology. Send curriculum vitae, description of research experience, and three letters of reference to: **Dr. Linda M. Hall, Department of Genetics, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, N.Y. 10461. Equal Opportunity/Affirmative Action Employer.**

MARINE SCIENTISTS

The Louisiana Universities Marine Center, a major new coastal laboratory for research and education, will open during summer 1985, under operation by the Louisiana Universities Marine Consortium (LUMCON), an organization of the state universities. Located in Cocodrie, near Houma, Louisiana, the Marine Center includes over 26,000 square feet of modern laboratories and will be served by two new research vessels, including a 32-m ocean-going vessel. LUMCON is seeking applications for as many as five openings for **assistant/associate scientists** to be filled between July 1985 and February 1986. These are permanent, state-supported positions. Primary duties are research but faculty affiliations with member universities are expected. Applicants must have a Ph.D. degree and, preferably, postdoctoral experience. Successful candidates are expected to develop an active, independent research program and to cooperate in the development of multidisciplinary programs. More experienced applicants may also be considered for a part-time position in research administration.

Marine scientists in any of the following disciplines are encouraged to apply, but the specific areas mentioned are of special interest: **MARINE SEDIMENTARY PROCESSES:** dynamics of fine sediments, effects of currents and waves, coastal wetlands, riverine influences. **COASTAL PHYSICAL OCEANOGRAPHY:** continental shelf and estuarine processes. **MARINE GEOCHEMISTRY:** riverine influences, sediment-water exchange, biologically important materials. **PHYTOPLANKTON ECOLOGY:** production, nutrient relationships, effects of grazing. **FISHERIES BIOLOGY:** life history and culture of commercially important species, particularly finfish, experimental studies. **MARINE TOXICOLOGY:** effects of pollutants on marine organisms, fate of organic contaminants in ecosystems.

Send letter of application, statement of research interests, curriculum vitae, and names of three references before 10 April 1985 to: **Dr. Donald F. Boesch, Director, Louisiana Universities Marine Consortium, Chauvin, La. 70344. An Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

POSTDOCTORAL POSITION IN NEW YORK CITY. Nervous system regeneration research. Experience in electron microscopy, protein synthesis/gel electrophoresis, and/or tissue culture desirable. Available immediately or before 1 September. Send curriculum vitae and names of references to: **Dr. Bernice Grafstein, Department of Physiology, Cornell University Medical College, New York, N.Y. 10021. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available September 1985 to work in any of the following research areas: molecular genetics, reproductive physiology, or microbiology. Strong background in biochemistry and molecular biology or immunology is expected. Send curriculum vitae and three letters of recommendation to: **Dr. A. J. Nappi, Chairman, Department of Biology, Loyola University of Chicago, 6525 North Sheridan Road, Chicago, Illinois 60626.**

POSTDOCTORAL RESEARCH ASSOCIATE AND LECTURER position available 1 July 1985, at Northeastern University's Marine Science Laboratory. Ph.D. in biology, zoology, or botany with research interests in ecology or organismic biology. Some teaching in area of specialization. Salary negotiable. Send curriculum vitae, brief description of research and teaching interests, and three letters of recommendation to: **Kenneth P. Sebens, Director, MSMSC, East Point, Nahant, Mass. 01908.**

POSTDOCTORAL RESEARCH ASSOCIATE—Position on an NIH-training grant is available for a postdoctoral research fellow in experimental pathology interested in cardiovascular biology. Salary is in the range of \$16,000 to \$18,000, depending on experience. Candidate may work in the area of pathology, biochemistry, cell biology, immunology, hematology, and pharmacology as it relates to the study of cardiovascular disease. Interested applicants may send curriculum vitae and names and addresses of three references to: **Dr. C. Richard Minick or Dr. David P. Hajjar, Department of Pathology, CORNELL UNIVERSITY MEDICAL COLLEGE, 1300 York Avenue, New York, New York 10021. An Equal Opportunity Employer, M/F/H/V.**

The Agricultural Research Service (ARS), Grand Forks Human Nutrition Research Center, Grand Forks, North Dakota, is looking for experienced scientists to fill the following positions:

RESEARCH CHEMIST (CLINICAL)

Scientist will join an ongoing program targeted to human nutritional requirements. Must have a knowledge of human and animal nutrition. Requires ability to develop, conduct, interpret, and report biochemical assays and experiments for assessing nutritional status of human volunteers or animals. Analytical biochemistry is emphasized. Individual and team research conducted.

RESEARCH PHYSIOLOGIST (CARDIOVASCULAR)

Scientist will conduct research in the establishment of human nutritional requirements. Knowledge of human and animal physiology and the ability to design, conduct, interpret and report nutritional experiments with animals or human volunteers are required. Individual and team research conducted.

NUTRITIONAL TOXICOLOGIST

Scientist will conduct individual and team research to establish human nutritional requirements. Knowledge of toxicology and the ability to design, conduct, interpret, and report nutritional experiments with animals and human volunteers are required.

The salary range for the above positions is \$30,549 to \$42,928 per annum to be commensurate with education/experience. Must be a U.S. citizen and have an established scientific reputation sufficient to have achieved membership in appropriate research societies. For information relating to the research, contact: **Leslie M. Kelvay, M.D., SD in Hygiene; telephone: 201-775-8353, or submit your application to: Smith M. DeForce, USDA-ARS-NCR-PD-POB, Room 318H, Building 003, BARC-West, Beltsville, Md. 20705. An Equal Opportunity Employer.**

POSITIONS OPEN

POSTDOCTORAL POSITION. The Dana-Farber Cancer Institute is seeking to fill one research position at the postdoctoral level to study the biochemistry and regulation of mammalian liver Cytochrome P-450 isoenzymes active in the metabolism of both foreign compounds and steroid hormones. Experience in biochemistry, enzymology, molecular biology, or a related biological science desired. Joint appointment will be held in an appropriate department at Harvard Medical School. Start date is flexible. Send résumé, copies of representative publications, and names of two or three references to: **Dr. David A. Waxman, Department of Biological Chemistry and Division of Cancer Pharmacology, Dana-Farber Cancer Institute, 44 Binney Street, Boston, Mass. 02115.** *An Affirmative Action/Equal Opportunity Employer.*

THE AUSTRALIAN NATIONAL UNIVERSITY invites applications from suitably qualified men and women for appointment as **POSTDOCTORAL OR RESEARCH FELLOW** in **COLLOID AND SURFACE SCIENCE**, Research School of Physical Sciences. Positions are available in the Department of Applied Mathematics for theoretical and experimental studies in the general area of colloid and surface science, in particular surface forces in liquids, surfactant aggregation and membrane biophysics. Prospective applicants may seek information from Dr. J. N. Israelachvili (head of department), Professor B. W. Ninham, or Drs. S. Marcelja and D. J. Mitchell. Applications from persons able to take leave of absence from their own institutions will be welcomed. Closing date: 1 May 1985. Salary will be in accordance with qualifications and experience within the ranges: **RESEARCH FELLOW**, \$24,840 to \$32,634 per annum; **POSTDOCTORAL FELLOW GRADE 1** (at a fixed point), \$21,411 to \$24,528 per annum. Current exchange: A\$1 = U.S.\$0.81. Appointment: **RESEARCH FELLOW** for up to 3 years initially with the possibility of extension, after review, to maximum of 5 years; **POSTDOCTORAL FELLOW** for 1 or 2 years initially, with possibility of extension of 3 years. Grants towards travel and removal; assistance towards housing; superannuation. Maternity leave is available. For further particulars, prospective applicants should write to: **P. M. White, Acting Registrar, The Australian National University, G.P.O. Box 4, Canberra ACT 2601, AUSTRALIA.**

The University is an Equal Opportunity Employer.

THE AUSTRALIAN NATIONAL UNIVERSITY invites applications from suitably qualified men and women for appointment as **POSTDOCTORAL OR RESEARCH FELLOW** in **VISION RESEARCH**, Research School of Physical Sciences. The successful applicant will join a multidisciplinary team, led by Professor A. W. Snyder, in the Department of Applied Mathematics (head, Dr. J. N. Israelachvili, FAA) collaborating with the Departments of Physiology, John Curtin School of Medical Research and of Neurobiology, Research School of Biological Sciences on neural principles in vision, and should have a strong background in human psychophysics and a keen interest in developing the principles of visual information processing. Applications from persons able to take leave of absence from their own institutions will be welcomed. Closing date: 1 May 1985. Salary will be in accordance with qualifications and experience within the ranges: **RESEARCH FELLOW**, \$24,840 to \$32,634 per annum; **POSTDOCTORAL FELLOW GRADE 1** (at a fixed point), \$21,411 to \$24,528 per annum. Current exchange: A\$1 = U.S.\$0.81. Appointment: **RESEARCH FELLOW** for up to 3 years initially, with the possibility of extension, after review, to maximum of 5 years; **POSTDOCTORAL FELLOW** for 1 or 2 years initially, with possibility of extension of 3 years. Grants towards travel and removal; assistance towards housing; superannuation. Maternity leave is available. For further particulars, prospective applicants should write to: **P. M. White, Acting Registrar, The Australian National University, G.P.O. Box 4, Canberra ACT 2601, AUSTRALIA.** *The University is an Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE position available to work on keratinocyte proteoglycans in a well-characterized in vitro system. Applicant should have biochemistry/cell biology background and experience in chemical characterization of proteins or GAGS. Send résumé to: **Dr. Leonard Milstone, Yale University/VA Medical Center, West Spring Street, West Haven, Conn. 06516.**

POSTDOCTORAL RESEARCH ASSOCIATE—A postdoctoral position to study the mechanism of interaction of pyrrolizidine alkaloids with nucleophilic biological substrates is available. Mass spectrometry will be used extensively. A Ph.D. in organic or physical organic chemistry is required. Previous research experience in mass spectrometry is essential and experience with chromatographic systems and high field NMR is desirable. Salary range: \$17,000 to \$19,000, depending on experience and qualifications. Send curriculum vitae and three letters of recommendation by 31 March 1985 to: **Dr. Max Deinzer, Department of Agricultural Chemistry, Oregon State University, Corvallis, Oregon 97331.** *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

POSTDOCTORAL RESEARCH ASSOCIATE. Seek Ph.D. in biophysics, physics, or electronic engineering, with experience in design and construction of electronic equipment, optics and working knowledge of computer architecture, to design and develop a pulsed xenon flash fluorometer for use in oceanographic research. The program is sponsored jointly by NASA and the U.S. Department of Energy. Initial appointment is for 2 years, starting about May 1985. Applicants should send résumé, with the names of three references, to: **Dr. G. T. Rowe, Department of Applied Science, Building 318, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, N.Y. 11973.** *Equal Opportunity Employer, M/F.*

UNIVERSITY OF GUELPH

The Departments of Animal and Poultry Science and Food Science, University of Guelph, are seeking applicants for a **PROFESSOR/ASSOCIATE PROFESSOR/ASSISTANT PROFESSOR** (teaching/research/extension) in meat science and growth metabolism; tenure-track position.

The individual will have the responsibility of teaching diploma and undergraduate courses in meat science. An opportunity exists to develop a graduate course that is commensurate with his/her research program. The individual will be expected to develop an outstanding research program in poultry meat and have a research interest in the quality of poultry products (eggs). The individual must be able to interact with both the production and processing sectors of the poultry industry.

Qualifications include: a Ph.D. in a discipline of animal and poultry science or food science; working knowledge of poultry slaughter, grading and processing for retail sale is desirable. An ability to communicate effectively and work harmoniously is expected. Citizenship is not a factor for consideration.

Applications will be accepted until 30 April 1985. Applications should include a complete résumé, transcripts, and a list of four references. Send to:

**Dr. R. R. Hacker, Chairman
Department of Animal and Poultry Science
University of Guelph
Guelph, Ontario, Canada N1G 2W1**

Position subject to final budgetary approval.

RESEARCH HYDROLOGIST in the Career Federal Service, U.S. Department of Agriculture (USDA), Agricultural Research Service, Hydrology Laboratory, Beltsville, Maryland, is seeking a researcher to initiate, plan, and conduct investigations in one or more of the following areas: hydrologic modeling, soil water transport, groundwater hydrology, water quality, remote sensing, hydrometeorology, climatology, or snow hydrology. Must have a degree in hydrology or related field or equivalent education and experience, plus 3 years of professional experience in the subject matter specialization. Ph.D. is desirable. Must be U.S. citizen. Salary commensurate with experience (\$25,489 to \$42,928 per annum). Call Dr. Albert Rango for position information on 301-344-3490. Send appropriate application and transcript to: **R. Cunningham or telephone: 301-344-3954** at: **USDA, Agricultural Research Service, Personnel Operations Branch, Room 107, Building 003, BARC-West, Beltsville, Maryland 20705.** Deadline for receipt of application is 1 April 1985. *An Equal Opportunity Employer.*

POSITIONS OPEN

RESEARCH ASSOCIATE position available in the area of genetics and protein analysis of frog virus 3. Ph.D. and relevant experience required. Send résumé and names of three references by 25 March 1985 to: **Dr. Allan Granoff, Department of Virology and Molecular Biology, St. Jude Children's Research Hospital, P.O. Box 318, Memphis, Tenn. 38101.**

An Equal Opportunity/Affirmative Action Employer

RESEARCH ASSOCIATE in plant molecular biology available immediately to participate in research on chloroplast gene organization and expression. Ph.D. with previous nucleic acids experience preferred. Send curriculum vitae and names of references to: **Dr. R. B. Hallick, Biochemistry Department, Bioscience West, University of Arizona, Tucson, Ariz. 85721.** Application deadline: 22 March 1985. *An Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.*

RESEARCH ASSOCIATE

Postdoctoral position as research associate at Harvard Medical School available immediately in the Mailman Research Center of McLean Hospital. Research deals with the neurobiology of protein and neuropeptide metabolism and the role of proteolysis in neuropsychiatric disorders and aging. Experience with immunocytochemistry related immunohistochemical techniques is required. Familiarity with protein characterization and enzymology is also desirable but not essential. Minimum requirements: recent or pending Ph.D. with background in biochemistry, immunology, or cell biology. Address curriculum vitae and letters of reference to: **Ralph A. Nixon, M.D., Ph.D., Ralph Lowell Laboratories, and send to: Nikki Alexander, Manager of Employment, McLean Hospital, 115 Mill Street, Belmont, Mass. 02178.** McLean Hospital is a teaching affiliate of Harvard Medical School and Massachusetts General Hospital. *An Equal Opportunity Employer.*

The Department of Cardiovascular Research of the Cleveland Clinic Foundation is seeking qualified M.D.'s and/or Ph.D.'s for **STAFF POSITIONS** in the fields of molecular pharmacology, biochemistry, and endocrinology. Candidates with a minimum of 2 years of postdoctoral experience and a strong background in neurosciences will be considered. An interest, or previous expertise, in the central nervous system regulation of cardiovascular function is preferred. Special consideration will be given to those applicants having demonstrable experience in the use of molecular biology techniques.

The Cleveland Clinic Research Division is a highly productive interdisciplinary research group and ample opportunities are available for collaborative activities in a modern research facility. Clinical scientists may be considered for dual appointments in associated clinical departments (Cardiology, Endocrinology, Neurology, Psychiatry). The Cleveland Clinic is an internationally recognized health care provider combining the delivery of quality medical care with an on-going commitment to medical research and education.

Send curriculum vitae, a short summary of research goals, and three references to: **Dr. Carlos M. Ferrario, Chairman, Department of Cardiovascular Research, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44106.**

VETERINARY PATHOLOGISTS

Board-certification plus experience in toxicologic pathology desired; however, Board-qualified candidates with significant experience will be considered. Responsibilities include histopathologic evaluation of slides and service as a pathology study monitor for ongoing studies. Ability to analyze data and write reports essential.

International Research and Development Corporation is an independent contract research laboratory specializing in animal safety evaluation (toxicology) studies for the pharmaceutical, agricultural, chemical, and consumer industries as well as government agencies. We are located near Kalamazoo, Michigan, midway between Detroit and Chicago, in an area affording a broad range of urban or rural lifestyles with excellent cultural and recreational opportunities. We offer a competitive compensation, benefits and relocation package. Please send résumé to:

**John Ragen
Director of Personnel
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SQUIBB

CARDIOVASCULAR PHARMACOLOGIST

The Squibb Institute for Medical Research, an established leader in the pharmaceutical industry, has an opening for a Research Investigator in our Pharmacology Department.

This position requires a Ph.D. degree in Pharmacology, Physiology or equivalent and at least 3 years relevant postdoctoral experience. The ideal candidate will have a background suitable for investigation of the role of the renin-angiotensin system and vasoactive peptides in cardiovascular control. Preference will be given to applicants with a broad background in the area of experimental hypertension and expertise with *in vivo* test systems.

Located in Princeton, New Jersey, this position offers an attractive salary and benefits package in a pleasant working environment designed to contribute to professional excellence. For prompt confidential consideration, please submit resume, including salary requirements to: **Squibb Institute for Medical Research, Department of Pharmacology, Room A2103, P.O. Box 4000, Princeton, New Jersey 08540.** Equal Opportunity Employer.

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POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATE position available immediately to study in vitro and in vivo activity of anticancer agents against human tumors. Candidates with experience in cell biology, tissue culture, and nucleic acid biochemistry preferred. Send curriculum vitae and names of three references to: **Dr. Karimullah Zirvi, Department of Surgery (G595), University of Medicine and Dentistry of New Jersey-New Jersey Medical School, 100 Bergen Street, Newark, N.J. 07103.** *The New Jersey Medical School is an Equal Opportunity Employer, M/F/H/V.*

Position: PROFESSOR AND DIRECTOR, Physical Therapy Education Program. **Responsibilities to be fulfilled:** Direct the education, research, and training programs of the Physical Therapy Education Program in the College of Medicine. **Qualifications desired:** Ph.D. degree, or equivalent, and a demonstrated scholar with an active and ongoing research program in physical therapy. **Salary:** appropriate for qualifications and responsibilities for a professor and director of Physical Therapy Education Program. Excellent fringe benefits. **Employer:** The University of Iowa, Iowa City, Iowa 52242, is an Affirmative Action/Equal Opportunity Employer. **Application:** Interested persons are invited to direct inquiries and submit curriculum vitae to: **Dr. Charles Swenson, Department of Biochemistry, Bowen Science Building, College of Medicine, University of Iowa, Iowa City, Iowa 52242.**

RESEARCH ASSOCIATE BIOCHEMIST/PHYSIOLOGIST. The Department of Pediatrics, Division of Neonatal/Perinatal Medicine, Children's Hospital of Michigan and Wayne State University School of Medicine, is seeking a **Ph.D. research biochemist/physiologist** with postdoctoral experience and a record of academic productivity. The candidate will be expected to collaborate with other members of the division in on-going research in human milk lipases and in canine cerebral blood flow, to compete for external research support independently and in collaboration, and to supervise one or more research assistants. Interested candidates should send curriculum vitae, a statement of research experience, and the names and addresses of three references to: **Dr. Ronald L. Poland, Department of Pediatrics, Children's Hospital of Michigan, 3901 Beaubien Boulevard, Detroit, Mich. 48201.** Deadline for application is 22 March 1985.

RESEARCH/PROJECT ASSOCIATE

Transplant research to study the role of dendritic cells in the immunogenicity of endocrine tissue. The position requires a Ph.D. with a strong background in cellular immunology and experience in one or more of the following areas: excess cell function, cell and/or organ culture, immunochemistry, immunogenetics, and immunohistology. Salary commensurate with experience. Send curriculum vitae and names of two references to: **Hans Sollinger, M.D., Ph.D., Department of Surgery, University of Wisconsin, Clinical Science Center, 600 Highland Avenue, Madison, Wis. 53792.** *The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer.*

TERATOLOGIST

Position available at The University of Texas Health Science Center at Dallas to serve as **project coordinator** for a computerized Teratogen Information System. Duties include developing, implementing, and maintaining the system; managing it on a day-to-day basis; and writing agent entries for the system. Ph.D. in teratology or related scientific discipline and 2 years of experience in clinical or experimental teratology or equivalent training required. Successful applicant must be able to write clearly and concisely. Appointment at appropriate faculty rank will be considered.

Send curriculum vitae to: **J. M. Friedman, M.D., Ph.D., Department of Obstetrics and Gynecology, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235.**

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VISUAL SCIENTIST. Research associate position available immediately for research on human spatial vision. Investigate optical quality of eye and photoreceptor mosaic with automated laser interferometry. Competitive salary. Send curriculum vitae and names of four references to: **David Williams, Ph.D., Center for Visual Science, University of Rochester, Rochester, N.Y. 14627.** *The University of Rochester is an Equal Opportunity/Affirmative Action Employer.*

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CONFERENCE

Given Institute Course in Aspen, Colorado Symposium on T-Cell Receptors, Genetic Structure and Function
5, 6, and 7 July 1985

Registration \$100 (trainees \$50). Limited to first 100 received. Deadline for applications is 1 May 1985. For information, write to: **Dr. Nicole Suciu-Foca, Department of Pathology, Columbia University College of Physicians and Surgeons, 630 West 168 Street, New York, N.Y. 10032.**

ASSISTANTSHIPS

GRADUATE ASSISTANTSHIPS

The Center for Management, Utilization and Protection of Water Resources (CMUPWR) has assistantships available for water related studies in biology and chemistry (M.S.), civil and chemical engineering (M.S. and Ph.D.) at Tennessee Technological University. These graduate programs offer traditional and interdisciplinary approaches to environmental research. Twelve-month support of up to \$9600 (M.S.) and \$13,800 (Ph.D.) plus tuition/fees. Send inquiries to:

V. Dean Adams
Director, CMUPWR
Tennessee Technological University
Box 5082
Cookeville, Tenn. 38505

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS are available for training in a program of infectious diseases and basic microbiology. Major areas of interest include genetics of host-parasite interactions, genetics of bacterial pathogens, cellular immunology, prokaryotic and eukaryotic molecular biology, and virology. The fellowships are part of a NIAID training grant and therefore only U.S. citizens or permanent residents can be considered. Interested individuals with a Ph.D. or M.D. degree should send curriculum vitae, reprints, names and addresses of three references, and a brief description of research experiences to: **Dr. Gayle Knapp, Department of Microbiology, Box 11, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294.** *An Equal Opportunity/Affirmative Action Employer.*

PRE- AND/OR POSTDOCTORAL FELLOWSHIPS for students interested in doing a field project on behavioral ecology and potential management of neotropical game mammals, in Panama. Send statement of interest, curriculum vitae, and three letters of reference to:

Dr. N. Smythe
Smithsonian Tropical Research Institute
APO Miami 34002

PRE- OR POSTDOCTORAL FELLOWSHIP IN NORTH AMERICAN ETHNOLOGY OR ETHNOHISTORY. Los Angeles County Museum of Natural History. Responsibility split evenly between research project of fellow's choice with our collections (including manuscripts and photographs) and assigned background research for Native American Hall focused on California and Greater Southwest. Preference given to candidates with experience in collections-based material culture studies and historical research, and areal specialization in California. Begins 1 July 1985 for 1 year. Send a three-page research proposal, a one-page characterization of research training and interests, a résumé, selected publications, and three letters of reference. Additional information from: **Dr. Margaret Hardin (telephone: 213-744-3382), Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, Calif. 90007.** *An Equal Opportunity Employer.* Deadline: 1 April 1985.

POSTDOCTORAL RESEARCH TRAINING FELLOWSHIPS

Fellowships available to residents of North America with Ph.D., M.D., or comparable degree and less than 1 year of postdoctoral laboratory experience by application date for beginning training in basic biomedical research. The 3-year award consists of a stipend of \$16,000 for the first year, with increments of \$1,000 for each of the next 2 years; \$1,000 per annum research allowance; travel to fellowship location; annual meeting. Application deadline: 15 August; fellowships activate following July. For application forms, write or telephone: **The Helen Hay Whitney Foundation, 450 East 63 Street, New York, N.Y. 10021; telephone: 212-751-8228.**

WORKSHOP

INTERNATIONAL WORKSHOP on Comparative Analysis of Catalytic Mechanisms of Zinc Enzymes. San Miniato (Pisa), Italy, 17 to 22 June 1985. Chairman: **I. Bertini (University of Florence, Italy)** and **M. Zeppezauer (Universität des Saarlandes, Federal Republic of Germany).** Everyone in the field will be there! For information, contact: **A. Scozzafava (Secretary), Department of Chemistry, Via Gino Capponi, 7, 50121 Florence, Italy.**

GRADUATE STUDY

GRADUATE STUDIES IN MEDICAL BIOCHEMISTRY. The Department of Biochemistry, Rush-Presbyterian-St. Luke's Medical Center in Chicago, invites applications from biology and chemistry graduates for admission to its graduate program leading to the Ph.D. degree. Benefits include tuition waiver, stipends of at least \$6500 per annum, and an opportunity to work in pharmaceutical industry research laboratories in the United States and Europe. The department emphasizes research in connective tissue biochemistry. Contact: **Dr. A. Bezukorovainy, Director of Graduate Program, Biochemistry Department, Rush-Presbyterian-St. Luke's Medical Center, Chicago, Ill. 60612.**

SUMMER INTERNSHIPS

NASA PLANETARY BIOLOGY SUMMER INTERNSHIPS. The Marine Biological Laboratory, Woods Hole, Massachusetts, invites applications from graduate students and seniors accepted in graduate programs for \$1,800 awards to participate in research at NASA centers and collaborating institutions during the summer. Application deadline: 1 April 1985. For information and applications, contact: **David Bermudes, Planetary Biology Intern Program, Department of Biology, Boston University, 2 Cummington Street, Boston, Mass. 02215.** *An Equal Opportunity/Affirmative Action Institution.*

PROGRAMS

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PREDOCTORAL TRAINING PROGRAM IN TOXICOLOGY. The graduate program in toxicology at the University of Mississippi Medical Center offers predoctoral training in these areas of toxicology: pulmonary, liver, CNS, neuromuscular and synaptic transmission, endocrine and cardiovascular system. Requires U.S. citizenship or permanent residence visa in the United States. Candidates should write to: **Dr. H. M. Mehendale, Program Director, Toxicology Training Program, Department of Pharmacology and Toxicology, The University of Mississippi Medical Center, Jackson, Miss. 39216-4505.** *Equal Opportunity Employer, M/F/H/V.*

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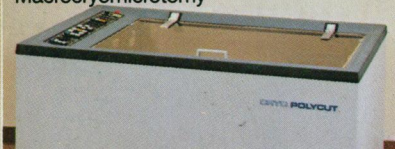
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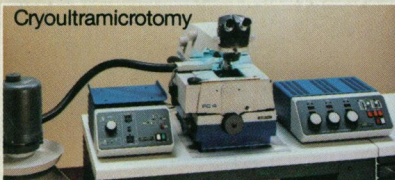
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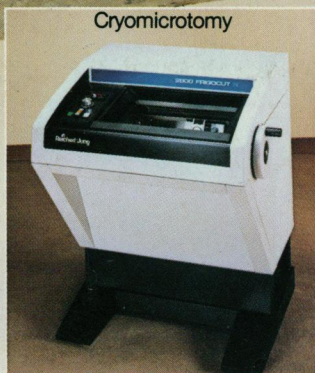
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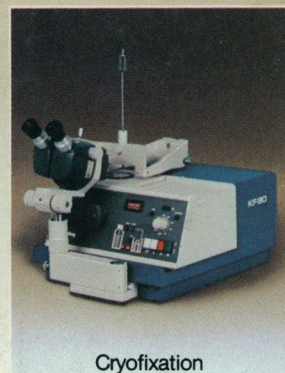
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