

based on state vectors and propagator matrixes. The last of these theories lies at the heart of most numerical realizations of theory and has become a necessary part of the background of people involved with computer implementation of elastic wave theory. By basing his monograph on this theory, Kennett has done a great service, both to theoreticians and to applied seismologists. The notation is consistent throughout, and the topics are taken up systematically. Throughout are readable discussions of important practical issues regarding computation of synthetic seismograms and the nature of observed seismograms. Kennett's own important recent contributions on the use of 2×2 reflectivity matrixes appear here in context and are substantially more bug-free and understandable than his original journal articles on the subject. Many topics not normally carried through in the context of propagator theory are taken up, such as source representation theory and generalized ray theory. Expansions and approximations of the response integrals are described, with careful attention to explanation of the physical significance of these computationally important expressions, including ray expansions, mode expansions, and partial ray-mode expansions. Some important very recent material, based on the so-called p -tau or slant-stack methods, is absent for reasons of timing.

The compactness and sense of a seamless whole that characterize this book are achieved at some cost to the serious reader. The steps in many important derivations are missing, which will be an occasion for assigned homework in graduate courses. The complexity of the material demands a fairly populous bestiary of boldface symbols and subscripts; the frequent practice of tersely writing an equation to define a new symbol leads to confusion, for the innocent reader may be led on a long chase through preceding chapters to determine where the symbol is first introduced. Perhaps a philosophically minded programmer will write "Commentaries on Kennett, with computer programs" and provide some of the signposts that are missing.

The book is strongly recommended for the collection of every practicing seismologist and graduate student, despite its slight, unavoidable shortcomings. Though not suitable for a first graduate course in wave propagation, it would be an excellent monograph for intermediate or advanced courses. It will be of real interest to prospective authors that Kennett essentially produced the entire book himself, through the popular "troff"

typesetting utility on the UNIX operating system. The ease with which it was possible to fine tune the standard macro package to produce a high-quality monograph enjoyable to read should be an encouraging example in technical publishing.

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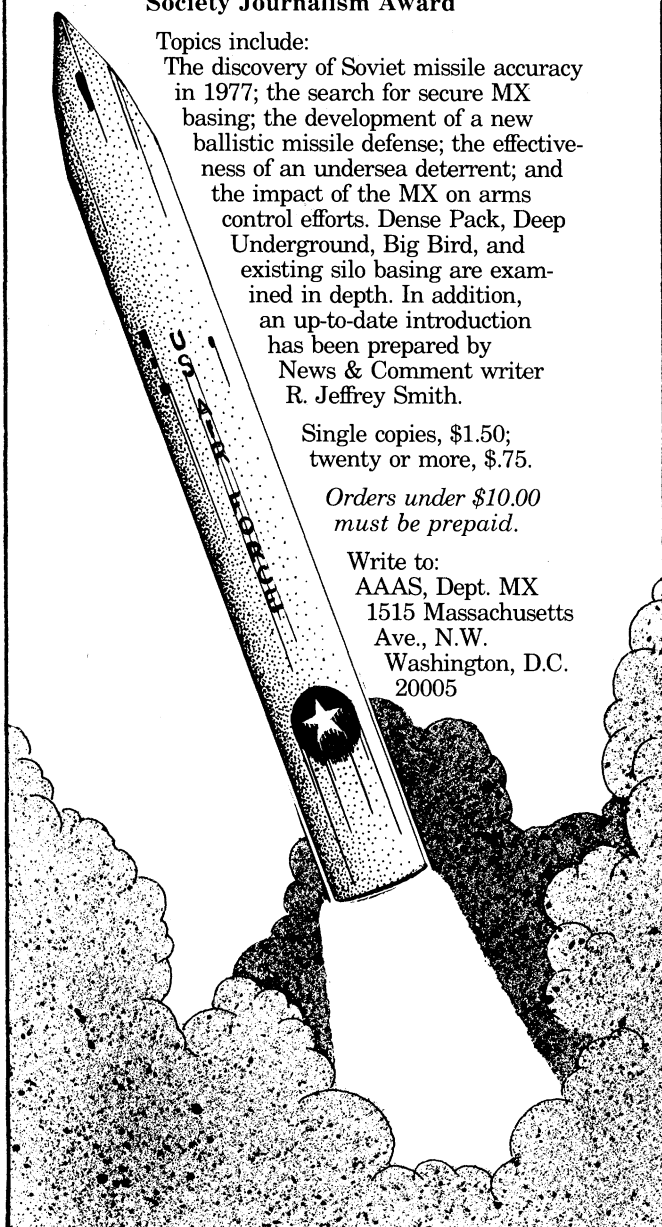
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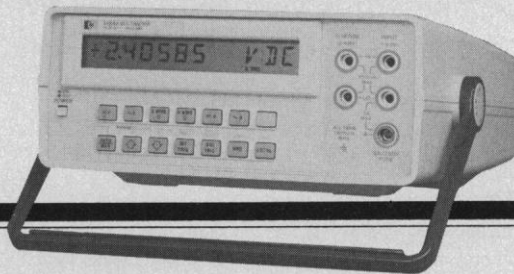
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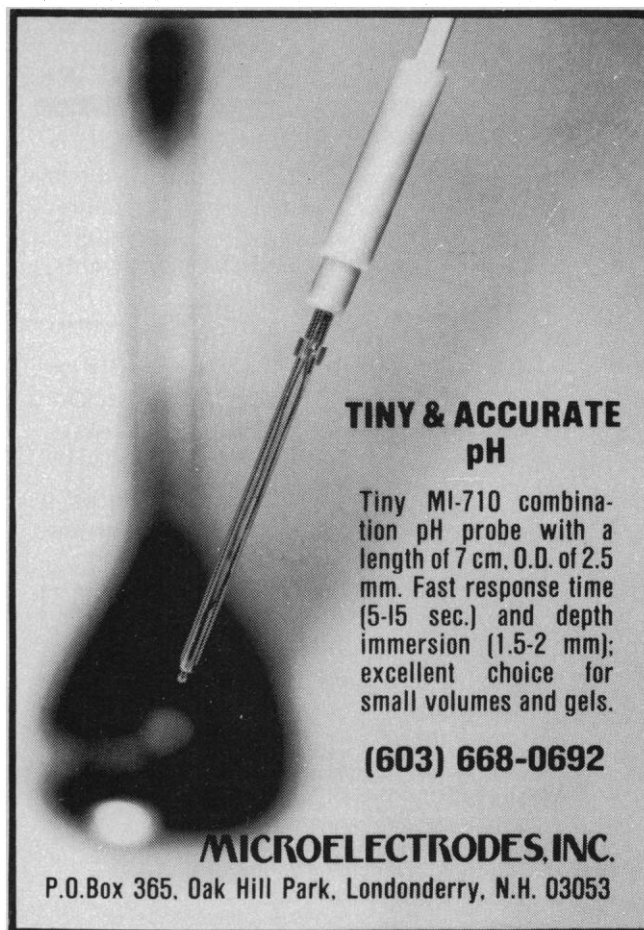
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1. Virtanen et al., J. Cell Sci 50, 45-63 (1981)

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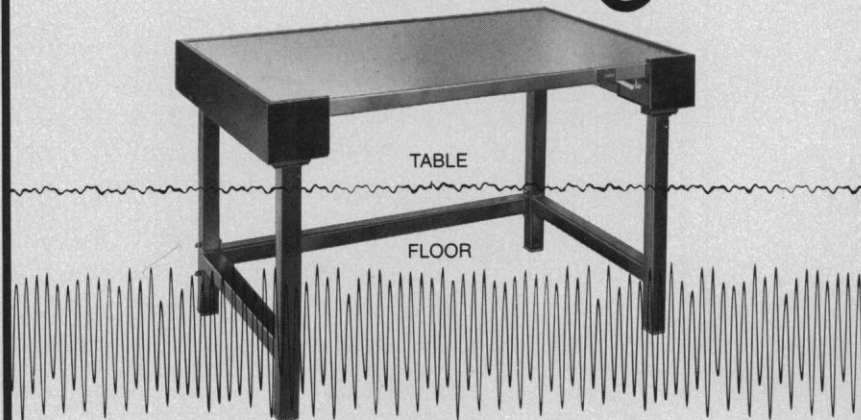
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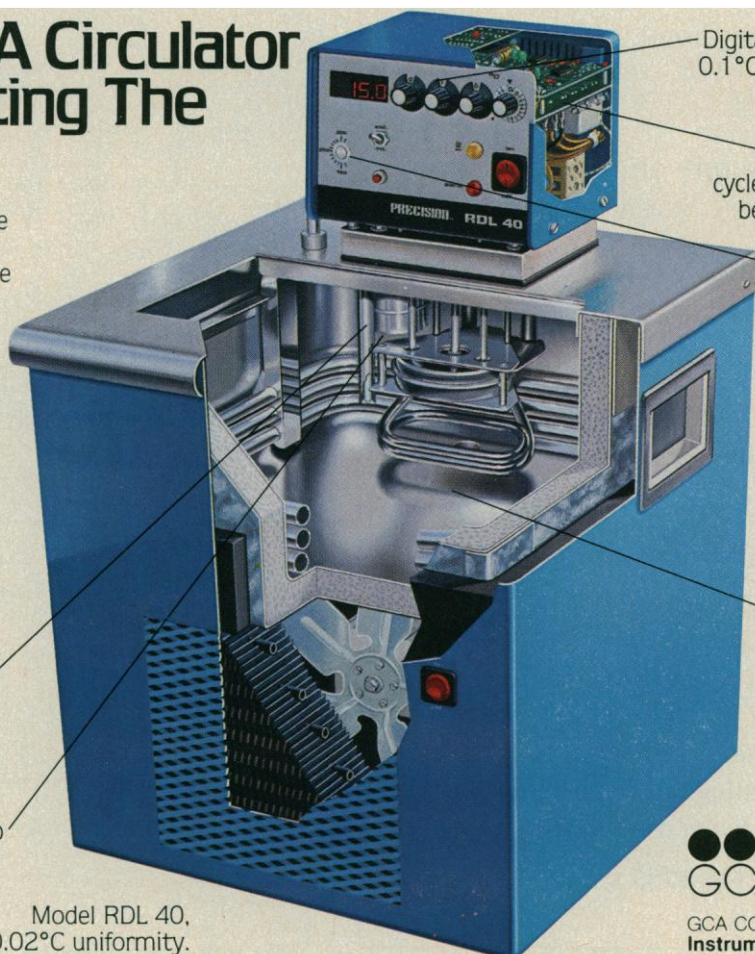
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BOOKS RECEIVED

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Research, vol. 154. From a symposium, New York, Nov. 1981.

Nucleosides, Nucleotides, and Their Biological Applications. Janet L. Rideout, David W. Henry, and Lowrie M. Beacham III, Eds. Academic Press, Orlando, Fla., 1983. xii, 327 pp., illus. \$29.50. From a meeting, Research Triangle Park, N.D., Oct. 1982.

Nutritional Factors in the Induction and Maintenance of Malignancy. C. E. Butterworth, Jr., and Martha L. Hutchinson, Eds. Academic Press, Orlando, Fla., 1983. xxii, 316 pp., illus. \$36. Bristol-Myers Nutrition Symposia, 2. From a symposium, Washington, D.C., Dec. 1982.

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Phonon Scattering in Condensed Matter. W. Eisenmenger, K. Lassmann, and S. Döttinger, Eds. Springer-Verlag, New York, 1984. xiv, 472 pp., illus. \$28. Springer Series in Solid-State Sciences, vol. 51. From a conference, Stuttgart, Aug. 1983.

Photographic Science. Earl N. Mitchell. Wiley, New York, 1984. xii, 404 pp., illus. \$28.95.

Photoreceptors. A. Borsellino and L. Cervetto, Eds., Plenum, New York, 1984. x, 373 pp., illus. \$55. NATO ASI Series A, vol. 75. From an institute, Erice, Sicily, Italy, July 1981.

Pineal Research Reviews. Vol. 2. Russel J. Reiter, Ed. Liss, New York, 1984. x, 214 pp., illus. \$56.

The Polysaccharides. Vol. 2. Gerald O. Aspinall, Ed. Academic Press, Orlando, Fla., 1983. xvi, 503 pp., illus. \$67.50. Molecular Biology.

Polytopes, Graphs and Optimisation. V. A. Yemelichev, M. M. Kovalev, and M. K. Kravtsov. Cambridge University Press, New York, 1984. vi, 423 pp., illus. \$49.50. Translated from the Russian edition (Moscow, 1981) by G. H. Lawden.

The Potential Effects of Carbon Dioxide-Induced Climatic Changes in Alaska. Jennifer H. McBeath et al., Eds. University of Alaska School of Agriculture and Land Resources Management, Fairbanks, 1984. viii, 208 pp., illus. Paper. Miscellaneous Publication 83-1. From a conference, Fairbanks, Ala., April 1982.

Principles of Sedimentary Basin Analysis. Andrew D. Miall. Springer-Verlag, New York, 1984. xiv, 490 pp., illus. \$39.

Proceedings of the Workshop on Laboratory and Observational Infrared Spectra of Interstellar Dust. (Hilo, Hawaii, July 1983.) R. D. Wolstencroft and J. Mayo Greenburg, Eds. Royal Observatory, Edinburgh, 1984. viii, 174 pp., illus. Occasional Reports of the Royal Observatory, No. 12.

Proceedings: 31st International Technical Communication Conference. (Seattle, April 1984.) Society for Technical Communication, Washington, D.C., 1984 (distributor, Univelt, San Diego, Calif.). Various paginated, illus. Paper, \$45.

Progressive Spinal Muscular Atrophies. Ingrid Gamstorp and Harvey B. Sarnat, Eds. Raven, New York, 1984. xii, 243 pp., illus. \$48. The International Review of Child Neurology.

Proteins. Structures and Molecular Principles. Thomas E. Creighton. Freeman, New York, 1984. xii, 515 pp., illus. \$36.95.

The Psychobiology of Anorexia Nervosa. K. M. Pirke and D. Ploog, Eds. Springer-Verlag, New York, 1984. viii, 181 pp., illus. Paper, \$29.50. From a workshop, July 1983.

Pyroclastic Rocks. R. V. Fisher and H.-U. Schmincke. Springer-Verlag, New York, 1984. xiv, 472 pp., illus. \$49.50.

QCD. Renormalization for the Practitioner. R. Pascual and R. Tarrach. Springer-Verlag, New York, 1984. vi, 277 pp. Paper, \$11.50. Lecture Notes in Physics, 194.

Quantum Probability and Applications to the Quantum Theory of Irreversible Processes. A. Dold and B. Eckmann, Eds. Springer-Verlag, New York, 1984. vi, 411 pp., \$19. Lecture Notes in Mathematics, 1055. From a workshop, Italy, Sept. 1982.

Quarks and Nuclear Structure. K. Bleuler, Ed. Springer-Verlag, New York, 1984. viii, 416 pp., illus. Paper, \$19. Lecture Notes in Physics, vol. 197. From a symposium, Bad Honnef, Germany, June 1983.

Recent Advances in Drug Delivery Systems. James M. Anderson and Sung Wan Kim, Eds. Plenum, New York, 1984. xii, 393 pp., illus. \$65. From a symposium, Park City, Utah, March 1983.

Recent Developments in Nonequilibrium Thermodynamics. J. Casas-Vázquez, D. Jou, and G. Lebon, Eds. Springer-Verlag, New York, 1984. xiv, 485 pp., illus. Paper, \$21. Lecture Notes in Physics, vol. 99. From a meeting, Barcelona, Sept. 1983.

Regulation of Target Cell Responsiveness. Kenneth W. McKerns, Asbjørn Aakvaag, and Vidar Hansson, Eds. Plenum, New York, 1984. Two volumes.

xvi, 534 pp., illus., and xvi, 548 pp., illus. Each volume \$75. Biochemical Endocrinology. From a meeting, Geilo, Norway, Sept. 1982.

Rolling Rivers. An Encyclopedia of America's Rivers. Richard A. Bartlett, Ed. McGraw-Hill, New York, 1984. x, 398 pp., illus. \$29.95.

Seafloor Scour. Design Guidelines for Ocean-Founded Structures. John B. Herbich et al. Dekker, New York, 1984. xiv, 320 pp., illus. \$59.75. Ocean Engineering.

Statistical Methods and the Improvement of Data Quality. Tommy Wright, Ed. Academic Press, Orlando, Fla. 1983. xx, 357 pp., illus. \$25. From a conference, Oak Ridge, Tenn., Nov. 1982.

Staying with It. John Jerome. Viking, New York, 1984. xii, 225 pp. \$14.95.

Steel and Its Heat Treatment. Karl-Erik Thelning. 2nd ed. Butterworths, Boston, 1984. xviii, 678 pp., illus. \$99.95.

Stonehenge. An Ancient Masonic Temple. Russell A. Herner. Macoy Publishing and Masonic Supply Co., Richmond, Va., 1984. xvi, 144 pp., illus. \$15.95.

Stroke and the Extracranial Vessels. Robert R. Smith et al., Eds. Raven, New York, 1984. xiv, 375 pp., illus. \$79.50.

Substance Abuse, Habitual Behavior, and Self-Control. Peter K. Levison, Ed. Published for the American Association for the Advancement of Science by Westview, Boulder, Colo., 1984. xii, 178 pp. \$25. AAAS Selected Symposia Series, 59. From a symposium, Houston, Jan. 1979.

Textbook of Polymer Science. Fred W. Billmeyer, Jr. 3rd ed. Wiley-Interscience, New York, 1984. xx, 578 pp., illus. \$34.95.

Theoretical Psychology. The Meeting of East and West. A. C. Paranjape. Plenum, New York, 1984. xiv, 353 pp. \$42.50. PATH in Psychology.

The Theory of Analytic Functions. A Brief Course. A. I. Markushevich. Mir, Moscow, 1983 (U.S. distributor, Imported Publications, Chicago). 423 pp., illus. \$10.95. Translated from the Russian edition (Moscow, 1978) by Eugene Yankovsky.

Theory of Jets in Electron-Positron Annihilation. Gustav Kramer. Springer-Verlag, New York, 1984. viii, 140 pp., illus. \$29. Springer Tracts in Modern Physics, vol. 102.

Theory of Probability. Harold Jeffreys. 3rd ed. Clarendon (Oxford University Press), New York, 1983. xii, 459 pp., illus. Paper, \$24.95.

Theory of Solitons. The Inverse Scattering Method. S. Novikov, S. V. Manakov, L. P. Pitaevskii, and V. E. Zakharov. Consultants Bureau (Plenum), New York, 1984. xii, 276 pp. \$49.50.

Therapeutics in Terminal Cancer. Robert G. Twycross and Sylvia A. Lack. Pitman, London, 1984 (U.S. distributor, Urban & Schwarzenberg, Baltimore). xvi, 207 pp., illus. Paper, \$17.50.

Three Axioms for a Theory of Conduct. Philosophy, and the Humanistic Science of Psychology. Louis Carini. University Press of America, Lanham, Md., 1984. xii, 96 pp. Paper, \$6.75.

Toxic Hazards of Rubber Chemicals. A. R. Nutt. Elsevier, New York, 1984. xii, 194 pp., illus. \$45.

Transitions to Alternative Energy Systems. Entrepreneurs, New Technologies, and Social Change. Thomas Baumgartner and Tom R. Burns, Eds. Westview, Boulder, 1984. xx, 292 pp., illus. Paper, \$22.50. Westview Replica Editions.

Trends and Applications of Pure Mathematics to Mechanics. P. G. Ciarlet and M. Roseau, Eds. Springer-Verlag, New York, 1984. vi, 422 pp., illus. Paper, \$20.50. Lecture Notes in Physics, 195. From a symposium, Palaiseau, France, Nov. 1983.

Understanding DNA and Gene Cloning. A Guide for the Curious. Karl Drlica. Wiley, New York, 1984. xiv, 205 pp., illus. Paper, \$11.95.

Universality in Chaos. A Reprint Selection compiled and introduced by Predrag Cvitanović. Hilger, Bristol, England, 1984 (U.S. distributor, Heyden, Philadelphia). xii, 513 pp., illus. \$48; paper, \$19.

Unreality and Time. Robert S. Brumbaugh. State University of New York Press, Albany, 1984. viii, 164 pp. \$29.50; paper, \$12.95.

The Wonder of Being Human. Our Brain and Our Mind. John Eccles and Daniel N. Robinson. Free Press (Macmillan), New York, and Collier Macmillan, London, 1984. x, 182 pp., illus. \$16.95.

WOPLOT 83. Parallel Processing: Logic, Organization, and Technology. J. Becker and I. Eisele, Eds. Springer-Verlag, New York, 1984. vi, 189 pp., illus. Paper, \$10. Lecture Notes in Physics, 196. From a workshop, Neubiberg, Germany, June 1983.

X-Ray Microscopy. G. Schmahl and D. Rudolph, Eds. Springer-Verlag, New York, 1984. x, 345 pp., illus. \$26. Springer Series in Optical Sciences, vol. 43. From a symposium, Göttingen, Germany. Sept. 1983.

Zooplankton of the Great Lakes. A Guide to the Identification and Ecology of the Common Crustacean Species. Mary D. Balcer, Nancy L. Korda, and Stanley I. Dodson. University of Wisconsin Press, Madison, 1984. xii, 175 pp., illus. Spiral bound, \$35.

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POSITIONS OPEN

MEMORIAL UNIVERSITY OF NEWFOUNDLAND FACULTY OF MEDICINE

Applications are invited for a tenure-track position in physiology at the level of **ASSISTANT OR ASSOCIATE PROFESSOR** in the Basic Medical Sciences Division at Memorial University of Newfoundland. Preference will be given to a person with experience in teaching medical students and course organization in the area of gastrointestinal physiology or, alternatively, a physiologist with an interest in metabolic processes at the whole animal or organ level. The candidate would be expected to develop a vigorous research program in the same or a related area. The possibility for clinical collaboration exists.

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

It is hoped to make this appointment during the 1984-1985 academic year, and applications, giving the names of three referees, should be sent as soon as possible to:

Dr. J. Barrowman
Chairman, Physiology Search Committee
Division of Basic Medical Sciences
Faculty of Medicine
Memorial University of Newfoundland
St. John's, Newfoundland, Canada A1B 3V6

ASSISTANT PROFESSOR OF BIOCHEMISTRY

A tenure-track position will be available in the Department of Biochemistry at Kansas State University in fall 1985. The successful applicant will have at least 2 years of postdoctoral experience. He or she will be expected to establish an independent research program and to participate in graduate and undergraduate teaching. Send résumé, a description of research plans, and the names of three references to: **David J. Cox, Head, Department of Biochemistry, Kansas State University, Manhattan, Kans. 66506**. Application deadline: 1 November 1984. *Kansas State University is an Equal Opportunity/Affirmative Action Employer.*

University of California, Los Angeles (UCLA) SCHOOL OF MEDICINE BIOLOGICAL CHEMISTRY

The Department of Biological Chemistry anticipates openings for several faculty members, most likely at the level of **ASSISTANT PROFESSOR**. Individuals with interests in modern aspects of molecular and cellular biochemistry or endocrinology are encouraged to submit a curriculum vitae, a one-page statement of research goals, and names of three references to:

Dr. Elizabeth Neufeld, Chair
Department of Biological Chemistry
UCLA School of Medicine
Los Angeles, Calif. 90024

The University of California is an Equal Opportunity Employer; applications from women and members of minority groups are encouraged.

ASSISTANT PROFESSOR of Chemistry. The Chemistry Department at Amherst College is seeking a Ph.D. chemist with a strong background and interest in organic chemistry for a regular tenure-track faculty position. Postdoctoral experience is desirable. The appointment will take effect on 1 July 1985 and represents an excellent opportunity for a person committed to both research and teaching at an institution dedicated to the education of undergraduates. Teaching responsibilities customarily involve instruction in departmental courses at the elementary and advanced levels. Participation in interdisciplinary extradepartmental courses is also encouraged. The successful candidate will be expected to develop a research program attracting the interest of chemistry majors. Please send a résumé, the names of three references, and a brief description of your teaching and research ideas to: **Search Committee, Department of Chemistry, Amherst College, Amherst, Massachusetts 01002**, by 1 November 1984. *Amherst College is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS available for molecular studies of lysosomal enzymes (protein structure, DNA cloning and gene expression, alterations in genetic disease). A strong background in biochemistry and/or molecular biology is essential. Send curriculum vitae and names of three references to: **Dr. Elizabeth F. Neufeld, Department of Biological Chemistry, University of California, Los Angeles, School of Medicine, Los Angeles, Calif. 90024**.

POSITIONS OPEN

ASSISTANT PROFESSOR OF CHEMISTRY

Tenure-track faculty position in the Department of Chemistry at the University of Wisconsin-Parkside. Candidates must possess a doctoral degree in organic chemistry or biochemistry; subsequent postdoctoral experience is preferred. Applicants must be committed to excellence in research and teaching. Teaching responsibilities include primarily undergraduate-level courses in organic chemistry and some involvement in the biochemistry and general chemistry curriculum. Areas of research complementary to our faculty, especially bioorganic and synthetic organic, would be most desirable. Applications will be reviewed on 15 October 1984. Please submit curriculum vitae, including a description of future research plans, and arrange to have three letters of recommendation sent to: **Professor Bruce Branchini, Department of Chemistry, University of Wisconsin-Parkside, Box No. 2000, Kenosha, Wisconsin 53141**. *The University of Wisconsin-Parkside is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR

One-year appointment, teach one semester each of microbial biochemistry and introductory microbiology. Ph.D. in microbiology, experience in teaching, and opportunity for research. Send résumé and names of three references before 1 December 1984 to: **Dr. R. Sjogren, Department of Microbiology/Biochemistry, Hills Building, University of Vermont, Burlington, Vt. 05405**. An Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR

The Section of Biochemistry, Molecular and Cell Biology, Division of Biological Sciences, Cornell University, seeks applicants for a tenure-track assistant professorship in cell or molecular biology. Candidates who have demonstrated a high potential for research using molecular approaches to problems in the biology of plant or animal cells will be given preference. A Ph.D. degree is required, and the successful candidate probably will have several years of postdoctoral experience. Participation in teaching at the undergraduate and graduate levels is an important part of the position. Send curriculum vitae and statement of research interests to: **Dr. Richard E. McCarty, Chairman, Section of Biochemistry, Molecular and Cell Biology, Wing Hall, Cornell University, Ithaca, N.Y. 14853**. Arrange to have three letters of reference sent to this address as well. The closing date for applications is 1 November 1984. *Cornell University is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF ANIMAL BIOLOGY. The Laboratories of Anatomy, School of Veterinary Medicine, University of Pennsylvania, invite applications for a tenure-track position at the assistant professor level to begin in 1985. Candidates must have advanced degree(s), postdoctoral and teaching experience, and accomplishment in the development of an independent research program in the neurosciences. Teaching responsibilities will be in one anatomical course and neurobiology. Preference is for someone with ability to teach in gross anatomy. Applicants should submit, as soon as possible, complete curriculum vitae and a brief description of their future research program. Please have one letter of recommendation and names for other references forwarded to: **Dr. Richard R. Miselis, Laboratories of Anatomy, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa. 19194**. An Equal Opportunity Employer.

A high-energy physics research establishment invites applications for the position of **ASSOCIATE SCIENTIST**. Responsibilities will include design, installation, maintenance, and upgrading of equipment and experimental facilities in the assigned experimental area. The incumbent will act as "liaison physicist" between the various experimental groups using the area and be responsible for ensuring satisfactory provision of research facilities. The position will involve supervision of up to 15 subordinates. Minimum qualifications required are a Ph.D. in either high-energy or nuclear physics and 3 years of experience in the construction, installation, operation, and maintenance of large, high-energy physics experiment multi-particle detectors and the interpretation/analysis of data taken from such equipment. Normal hours of work are 40 per week from 8:30 a.m. to 5:00 p.m. each workday. Salary offered is \$28,000 per annum. Applicants should send their résumé to: **Illinois Job Service, 910 South Michigan Avenue, Third Floor, Alien Certification Unit, Chicago, Illinois 60605**, quoting Reference Number 923.061J. An employer-paid advertisement.

MEDICAL DEVICES R&D SCIENTIST

This position requires a scientist with at least 5-10 years experience toward specialty medical devices. This scientist will be part of a new products R&D group, a key objective of which is to develop value added polymers for growing medical markets. As part of a team, the key individual will have demonstrated the ability to identify new growth opportunities and make recommendations to capitalize on them. The successful candidate will have an advanced degree in Materials Science, Polymer Science/Engineering, or related discipline. Solid communication, organizational and leadership skills are a prerequisite.

The position is located in a modern industrial research facility in Northeastern Ohio. We offer a competitive salary/benefits/relocation package. Submit resume to:

BFGoodrich

Dept. of Human Resources
9921 Brecksville Road
Brecksville, Ohio 44141

An Equal Opportunity Employer M/F

GROUP LEADER MOLECULAR BIOLOGY

Unigene Laboratories, Inc., a multidisciplinary biotechnology research corporation, is seeking a distinguished scientist for the position of Group Leader in Molecular Biology. The successful candidate will have 5-10 years of post-Ph.D. research experience and an outstanding publication record demonstrating a broad background in all aspects of molecular biology. Scientific creativity and superior professional credentials are prerequisites, as the individual will be responsible for supervising and troubleshooting a team of senior and junior staff. Previous experience as a Group Leader, Project Leader or Principal Investigator in Molecular Biology is essential, while industrial experience is desirable but not required.

Unigene is a sharply-focused, financially secure institution utilizing Molecular Biology, Immunology, Protein Chemistry and Organic Chemistry to conduct state-of-the-art research in the field of human health care. Our ultra-modern research facility is located in Fairfield, New Jersey. The company offers an excellent salary and comprehensive benefits package, including equity participation, along with the opportunity to work in a stimulating research environment which fosters continuing professional development.

For a challenging and rewarding opportunity to participate in the rapidly expanding health care field with a young and aggressive company, please send a CV and three references in confidence to:

Dr. Warren P. Levy
Unigene Laboratories
110 Little Falls Road
Fairfield, New Jersey 07006

unigene
An equal opportunity employer

Fellowships in Science Broadcast Journalism

WGBH-Boston, a major producer of radio and television programs, including NOVA, is soliciting applications from proven science writers who want to learn the skills and make a career of science broadcast journalism. We are creating six year-long fellowships for experienced science journalists willing to risk their talents on a major career change.

The program will begin in January, 1985. Fellows will train intensively in the art and craft of producing and writing science programs for radio and television, in a working professional environment.

For details of the Fellowships and an application, please write to:

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



Vice President Preclinical Research

The Sandoz Research Institute of Sandoz, Inc., a leading pharmaceutical company with a worldwide reputation for notable research, is seeking a Vice President of Preclinical Research.

This challenging and professionally rewarding opportunity requires an individual possessing an M.D. or Ph.D. coupled with the necessary training, experience, and leadership capabilities to direct a preclinical research program focusing on atherosclerosis, diabetes, platelets and monoclonal antibodies. Responsibilities include the management of biology and chemistry departments involved in the design and discovery of new therapeutic agents as well as the direction of physical chemistry and chemical development activities. The ideal candidate should have expertise in directing research in an academic or industrial setting.

The Research Institute encourages a dynamic and innovative scientific environment. Located on campus-like facilities in northern New Jersey, Sandoz, Inc. offers an excellent compensation and benefits package.

Please forward your resume and salary requirements in confidence to:

Judith O'Hagan
Personnel Manager
Sandoz Research Institute
SANDOZ, INC.
Route 10 (403-1)
East Hanover, New Jersey 07936

An Equal Opportunity Employer M/F/H



ADELPHI UNIVERSITY CELL BIOLOGIST

We are seeking to fill one tenure-track position at the ASSISTANT PROFESSOR level to begin September 1985. Applicants with a strong background in cell biology and research interests in development, virology or immunobiology are sought. The PhD degree is required. The successful candidate will be asked to teach at the undergraduate and graduate (M.S.) levels and to inaugurate a viable research program in his/her specialty.

Send resume, including the names of three references, by November 1, 1984 to:

Dr. George K. Russell
Chairman, Personnel Committee
Biology Department
Adelphi University
Garden City, NY 11530



Adelphi University is an Affirmative Action/Equal Opportunity Employer M/F

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 immunochemistry, 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-labeled 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:

Personnel Director
CENTER FOR MOLECULAR MEDICINE AND IMMUNOLOGY
University of Medicine and Dentistry of New Jersey
100 Bergen Street
Newark, N.J. 07103

Equal Opportunity Employer

POSITIONS OPEN

ASSISTANT PROFESSOR—PHARMACOLOGY

The Morehouse School of Medicine (MSM) invites applications for the position of assistant professor of pharmacology to be filled by 1 January 1985. MSM is a new, 4-year medical school associated with the Atlanta University Center, a consortium of historically Black universities and colleges. The candidate should present evidence of strong teaching credentials and the ability to initiate or transfer a vigorous and independent research program. Send curriculum vitae, statement of research goals, and three letters of reference by 1 October to: Dr. David W. Hein, Department of Pharmacology, Morehouse School of Medicine, 720 Westview Drive, Atlanta, Ga. 30310-1495. An Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF PHYSIOLOGY

A tenure-track position at the rank of assistant professor is available in the Department of Physiology and Biophysics of the University of Tennessee Center for the Health Sciences. Candidates should have a Ph.D. or M.D. degree, a minimum of 2 years of postdoctoral training, and a strong research background in organ system or whole animal physiology. Demonstrated ability to initiate a strong independent research program and to engage in teaching activities of the department are expected. Send curriculum vitae, a brief statement of research interests, and the names of three references to: Dr. Leonard Share, Chairman, Department of Physiology and Biophysics, University of Tennessee Center for the Health Sciences, Memphis, Tennessee 38163. Closing date for receipt of applications is 1 December 1984. An Equal Opportunity/Affirmative Action Employer.

COLLEGE OF THE VIRGIN ISLANDS POSITION OPEN—BIOLOGY

Visiting assistant or associate professor of biology (spring semester, 1985 only), beginning 15 January 1985. Candidates must have a doctorate and experience in teaching vertebrate and developmental biology. Position is most appropriate for established faculty member on leave. Experience in the tropics and research interests are desirable. Will teach vertebrate biology and developmental biology to biology majors. Aggregate compensation \$12,263 to \$17,013, plus liberal benefits. Address letter of application, resume, and three letters of recommendation, by 31 October 1984, to: Dr. LaVerne Ragster, Chairperson, Science and Mathematics Division, College of the Virgin Islands, Charlotte Amalie, St. Thomas, United States Virgin Islands 00802.

Equal Opportunity/Affirmative Action Employer

BIOLOGY DEPARTMENT

Assistant Professor

The Biology Department of Eastern Michigan University announces a TENURE-TRACK position beginning 28 August 1985 for a MICROBIOLOGIST able to teach general microbiology, microbial genetics, and microbial physiology with research interest in molecular biology of bacteria and viruses.

Appointment as assistant professor requires Ph.D., teaching experience, and publication. Applications available from and must be returned by 12 November 1984 to:

Eastern Michigan University
310 King Hall-S
Ypsilanti, Mich. 48197
Telephone: 313-487-3430

Address curriculum vitae with names of three references, and requests for information, to: Dr. Herbert H. Caswell, Jr., Head, Biology Department, Eastern Michigan University, Ypsilanti, Mich. 48197.

An Equal Opportunity/Affirmative Action Employer and Educational Institution.

POSTDOCTORAL FELLOW

A 2-year position for a postdoctoral fellow is available in the Department of Physiology and Biophysics of the University of Tennessee Center for the Health Sciences. Candidates should have a Ph.D. or M.D. degree, and a research interest in central control of vasopressin secretion. Send curriculum vitae, a brief statement of research interests, and the names of three references to: Dr. Leonard Share, Professor and Chairman, Department of Physiology and Biophysics, University of Tennessee Center for the Health Sciences, Memphis, Tennessee 38163. Closing date for receipt of applications is 1 December 1984. An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

BIOTECHNOLOGY SALES. Boehringer Mannheim, a leading international producer of research biochemicals, has rewarding telemarketing sales opportunities available in the Indianapolis area. Opportunities are also available for field sales personnel located in key metropolitan areas across the nation. Successful candidates must meet the following qualifications: A self-starter, M.S. degree in biological science, bioengineering and/or immunochemical laboratory experience preferred. If you have the desire to develop your full potential in sales, send resume to: National Field Sales Manager, Boehringer Mannheim Biochemicals, 7941 Castleway Drive, P.O. Box 50816, Indianapolis, Ind. 46250. Equal Opportunity Employer.

CELL BIOLOGIST

Wanted to play a major role in supervising a cell biology laboratory that is part of a multidisciplinary vascular surgical research team at a major Boston teaching hospital. Current projects include the study of seeding of arterial prostheses with primate and human vascular endothelial cells. Background in light and electron microscopy and cell culture desirable. Excellent salary, benefits.

Send responses to: Hugh Burke, New England Medical Center, 171 Harrison Avenue, Box 795, Boston, Mass. 02111.

An Affirmative Action/Equal Opportunity Employer, M/F.

CELL AND MOLECULAR BIOLOGY

The Department of Zoology, University of Maryland, invites applications for a tenure-track appointment beginning fall 1985. The applicant should have postdoctoral experience and show potential for developing a strong research program involving the use of molecular techniques to study the mechanism or regulation of gene expression (for example, in cell growth and differentiation or cellular responses to external signals). Applications must be received by 30 November 1984. Send curriculum vitae, reprints, a statement of research interests, and at least three letters of recommendation to: Dr. Ibrahim Z. Ades, Chairman, Search Committee, Department of Zoology, University of Maryland, College Park, Md. 20742. Affirmative Action/Equal Opportunity Employer.

CELLULAR IMMUNOLOGIST—Postdoctoral fellow or research associate wanted to study cytolytic and suppressor T cells in human melanoma, and assist in a related program on the effects of new biomodulators on human cell-mediated immunity. Strong background in either animal or human cellular immunology desirable. Send curriculum vitae and names of three references to: Dr. Malcolm S. Mitchell, Departments of Medicine and Microbiology, University of Southern California Cancer Center, Los Angeles, California 90033.

DIRECTOR

MICHIGAN STATE UNIVERSITY DEPARTMENT OF ENERGY PLANT RESEARCH

Applications for the position of director of the U.S. Department of Energy Plant Research Laboratory at Michigan State University are invited from plant scientists with an outstanding record of research achievement. We seek an individual who will maintain an active research program, who is capable of providing scientific leadership, and who is willing to oversee the administration of the 12 to 14 active research groups which comprise the Plant Research Laboratory. Since the mission of the Plant Research Laboratory involves the solution of energy-related problems in the plant sciences, the director should be appreciative of both basic and applied research in the plant sciences and should have a desire to participate in the formulation and implementation of research initiatives in these areas. Recruitment of new faculty in the near future is anticipated. The director will be appointed as a tenured professor in an appropriate academic department at Michigan State University. The salary is intended to be attractive, and access to laboratory space, research facilities, and levels of ongoing research support are exceptional.

Inquiries or applications stating full professional details and names of at least three referees should be directed to: C. R. Somerville, Chairman, PRL Search Committee, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, Mich. 48824-1312; telephone: 517-355-5159. Applications should be received by 15 October 1984.

Michigan State University is an Equal Opportunity/Affirmative Action Employer.



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.

Research Scientists

Ph.D. with two or more years post-doctoral experience in one of the following areas:

- **Nucleic Acid Biochemistry**
- **Protein Chemistry**
- **Molecular Biology**
- **Bioengineering**
- **Analytical Chemistry**

Research Assistants

Bachelor's or Master's Degree in one of the following areas:

- **Microbiology**
- **Molecular Biology**
- **Chemistry**
- **Bioengineering**
- **Tissue Culture**

Send curriculum vitae in confidence to:
Charlotte L. Gregory, Personnel Manager
Integrated Genetics, Inc.
31 New York Avenue
Framingham, Massachusetts 01701
An Equal Opportunity Employer

Senior Research Immunologist

SDS Biotech Corporation, an established Agricultural Chemicals and Animal Health Company with a new name, has an opening for a Senior Research Immunologist to work in the Biotechnology Group at its World Headquarters, located in the Eastern Suburbs of Cleveland, Ohio in Concord Township.

The candidate selected for this position must have a PhD in Molecular Immunology with at least two years post doctoral experience in basic research related to cell culture, in vitro cell assays, and lymphokine characterization with particular expertise in macrophage function. This individual will assist in the design, screening, evaluation and research on potential new products from Biotechnology.

Excellent Salary and Benefits package. Interested candidates should send resumes and salary history, in strictest confidence, to:

A.H. Brooks
Human Resources Supervisor
SDS Biotech Corporation
P.O. Box 348
Painesville, Ohio 44077



An Equal Opportunity Employer M/F/H/V

CSIRO

Australia

CHIEF OF DIVISION

**DIVISION OF HUMAN NUTRITION
ADELAIDE SA**

Applications for the position of Chief of the Division of Human Nutrition are invited from scientists with outstanding records of personal research achievement and leadership in human nutrition. The position will become vacant on the retirement of the present Chief, Dr B S Hetzel MD FRCP FRACP FFCM FTS.

CSIRO is Australia's largest and most comprehensive research organization, having approximately 7,500 employees of whom 2,900 are scientists. Its broad charter covers research into problems of primary and secondary industries, and also such fields of community interest as human nutrition, the environment, and the development and use of natural resources. The Organization has grouped its research activities in five Institutes: Animal and Food Sciences, Biological Resources, Energy and Earth Resources, Industrial Technology, and Physical Sciences. The Division of Human Nutrition is one of the Divisions of the Institute of Animal and Food Sciences. Also in the Institute are the Divisions of Animal Health, Animal Production, Fisheries Research, Food Research, Molecular Biology, and Tropical Animal Science, the Australian National Animal Health Laboratory, and the Wheat Research Unit.

The Division of Human Nutrition has a total staff of 96, which includes 41 professionals. It has excellent research facilities in two laboratories. The headquarters of the Division are at the larger laboratory, situated on the campus of the University of Adelaide. The other laboratory is located on the CSIRO property 'Glenelg' at O'Halloran Hill, 18 km south of the city and close to the Flinders University. The long-term building plan provides for combining both laboratories at Glenelg, which may also become the centre for other Adelaide laboratories of CSIRO.

The Division has research programs in experimental and epidemiological science. Experimental science programs are Developmental Biology, which is concerned mainly with prenatal brain development and nutritional causes of mental retardation; Control Processes in Growth and Over-nutrition, with emphasis on the regulation of carbohydrate and protein metabolism; and Dietary Lipids and Physiological Function, with particular reference to the role of dietary fats in the development of diseases of affluence such as coronary heart disease. The epidemiology program, Nutritional Epidemiology and Behaviour, uses large, population-based case-control studies to identify possible associations between nutrition and health. It also includes investigations of factors governing the choice and quantity of food consumed.

The Chief of the Division will be responsible to the Director of the Institute of Animal and Food Sciences for the leadership, scientific direction and integration of the research programs of the Division, and will be encouraged to promote collaboration with other CSIRO Divisions, universities, hospitals, State health departments and other institutions conducting research in relevant areas. In particular, the Chief will be expected to encourage research interaction with the CSIRO Division of Food Research.

It is important that the Chief have the academic and professional background to understand health problems and the ability to establish and maintain links with the medical and cognate professions, but medical qualifications are not essential. The Chief should also be capable of effectively communicating with the food industry and the community in general.

The salary will be not less than \$A57,307 pa plus an expenses of office allowance of \$A1,355 p.a.

Appointment to CSIRO is for an indefinite period and carries Australian Government superannuation benefits, subject to normal conditions. The position of Chief of Division is offered for a negotiable term of the order of five to seven years, with subsequent options for a further term, if mutually desired, or for a senior position in the Organization.

The Executive of CSIRO has appointed a Search Committee to seek suitable candidates for this position. The Chairman of the Committee is Dr K A Ferguson, FTS, Director of the Institute of Animal and Food Sciences. He would be pleased to provide further information about the Division and discuss the position with potential applicants. He would also be pleased to receive advice concerning the appointment from people with a particular interest in it. Dr Ferguson may be contacted at the address below, or by telephone at Canberra (062) 48 4211.

Applications stating full personal and professional details, and names of at least three professional referees and quoting reference No A4437 should be directed to:

The Director
CSIRO Institute of Animal and Food Sciences
PO Box 225
DICKSON ACT 2602
AUSTRALIA

By October 19 1984.

CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

NIH BIOCHEMIST

Position available spring or summer 1985 for research associate (M.D. or Ph.D.) with background or interest in biochemical research on microtubules. Current projects relate to post-translational tyrosinolation or phosphorylation of microtubule proteins. Starting stipend: \$16,000 to \$21,000, depending on experience (plus allowance for dependents). Inquiries to: **Dr. Martin Flavin, Laboratory of Cell Biology, NHLBI, NIH, Bethesda, Maryland 20205.**

CHAIR OF ANESTHESIOLOGY

The College of Medicine of the University of California at Irvine seeks a person of exceptional ability to occupy the chair of the Department of Anesthesiology. Candidates should hold the M.D. degree, be Board-certified in anesthesiology, have an excellent record of research accomplishments, and have demonstrated academic leadership ability. The chair is expected to build a department with strong research programs without sacrificing quality in the clinical service and teaching programs. We hope to fill the position by April 1985. Persons who wish to be considered for the position should send curriculum vitae and the names of three referees to:

**Professor Stephen H. White, Chairman
Department of Physiology and Biophysics
University of California
Irvine, California 92717**

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

DEVELOPMENTAL BIOLOGIST ASSISTANT PROFESSOR

Applications are invited for a tenure-track position beginning 1 September 1985. The successful candidate is expected to maintain an active research program focused on a significant problem in developmental biology, biochemistry, or immunology, and to teach undergraduate developmental biology and a graduate level course. Michigan State University has a large, outstanding, and cooperative group of biologists. Housing is affordable and good public schools are available. Send detailed curriculum vitae, reprints, the names and addresses of three references, and a statement of research interests to:

**Chairperson
Developmental Biology Search Committee
Department of Zoology
Natural Science Building
Michigan State University
East Lansing, Mich. 48824**

Michigan State University is an Affirmative Action/Equal Opportunity Employer.

DIRECTOR, ENVIRONMENTAL STUDIES PROGRAM. Ph.D. preferred in a field which complements present courses and research activities in the natural and social sciences. The director is a member of the faculty with opportunity for tenure who will teach in the program and, with the Environmental Studies Committee and appropriate academic departments, develop courses suitable for a liberal arts, undergraduate college. Academic rank and salary will depend on qualifications for an appointment to start in September 1985. Send curriculum vitae and names of three references to: **Professor A. Myrick Freeman III, Director, Environmental Studies Program, Department of Economics, Bowdoin College, Brunswick, Maine 04011, by 15 October 1984.** *Bowdoin College is an Equal Opportunity/Affirmative Action Employer.*

DIRECTOR OF RESEARCH LABORATORY Ph.D. biologist or biochemist wanted to direct the research laboratory of the Department of Obstetrics and Gynecology at the Albert Einstein Medical Center, Northern Division, Philadelphia, Pennsylvania. Academic appointment at major university medical school. Opportunity to continue personal research interests, direct laboratory aspects of in vitro fertilization program, and teach resident physicians and medical students. Knowledge of radioimmunoassay, chromatography, and tissue culture techniques required. Send curriculum vitae to: **Martin Farber, M.D., Chairman, Department of Obstetrics and Gynecology, ALBERT EINSTEIN MEDICAL CENTER, NORTHERN DIVISION, York and Tabor Roads, Philadelphia, Pa. 19141.** *An Equal Opportunity Employer.*

POSITIONS OPEN

Search Extended

DIRECTOR OF SPONSORED RESEARCH

Vanderbilt University School of Medicine invites nominations and applications for the position of director of sponsored research. The director reports to the associate dean for biomedical sciences and is responsible for a wide variety of matters pertaining to sponsored research, program development, and program management. Qualifications should include an earned doctorate in a biomedical sciences discipline and experience in grants management and development. NIH experience is preferred. The position is available immediately and salary is dependent upon qualifications. Send application with curriculum vitae to: **John H. Hash, Associate Dean for Biomedical Sciences, Vanderbilt University School of Medicine, Nashville, Tenn. 37232.**

Equal Opportunity/Affirmative Action Employer

DIRECTOR OF GAIT STUDY CENTER—The duties of this position are to direct programs in research and clinical studies related to locomotion and associated fields, including such areas as gait analysis, locomotion evaluation, and kinesiology studies. The director will report to the department chairman and be responsible for preparation of grants, budgets, education of students, and interaction with government and private industry.

Eligible candidates should have a Ph.D. in kinesiology, biomechanics, physiology, anatomy, or related fields.

Send curriculum vitae to: **William Sanner, D.P.M., Chairman, Department of Podiatric Orthopedics, Pennsylvania College of Podiatric Medicine, Eighth at Race Street, Philadelphia, Pa. 19107.**



**University of
Pennsylvania
Plant Science
Institute**

The University of Pennsylvania invites applications and nominations for the **DIRECTORSHIP** of its **PLANT SCIENCE INSTITUTE (PSI)**. Institute members conduct research in plant molecular biology, biochemistry, biophysics, physiology, genetics, development, and ecology. A new laboratory building and greenhouses are under construction. Candidates should have scientific credentials sufficient to merit a professorship within the Department of Biology, and should be able to provide intellectual and administrative focus to an active and excellent group of basic scientists, postdoctoral fellows, and graduate students.

Please send nominations, curriculum vitae, and letters of inquiry to:

**PSI Director Search Committee
Office of the Chairman
Department of Biology
University of Pennsylvania
Philadelphia, Pa. 19104**

Faculty Appointments in PLANT BIOCHEMISTRY PLANT MOLECULAR BIOLOGY PLANT PHYSIOLOGY

The **FOOD FOR THE 21ST CENTURY PROGRAM** at the University of Missouri-Columbia is providing **THE INTERDISCIPLINARY PLANT BIOCHEMISTRY AND PHYSIOLOGY PROGRAM** with new, tenure-track positions. For the first position, we are seeking an outstanding individual with an established research program in plant biochemistry, molecular biology, or physiology. The first appointment will be at the associate or full professor level. Ideally, this individual will complement the existing multidisciplinary programs, but a strong independent research program addressing fundamental biological questions in plants is the primary goal. The appointment will be in the department of the individual's choice where contributions to graduate teaching program are expected. Excellent start-up funds and salary are available in addition to substantial ongoing research support. Send curriculum vitae, description of research plans, and names of three references to: **Douglas D. Randall, Director, Interdisciplinary Plant Biochemistry and Physiology Program, 322 Chemistry Building, University of Missouri, Columbia, Mo. 65211.**

The University of Missouri, Columbia, is an Equal Opportunity/Affirmative Action Institution.

POSITIONS OPEN

EVOLUTIONARY BIOLOGIST

The Department of Zoology, University of Maryland, seeks outstanding applicants in the area of evolutionary biology for fall 1985. Preference will be given to candidates who use molecular techniques (for example, DNA-sequencing, immunology) to investigate evolutionary questions. Submit curriculum vitae, statement of research interests, reprints, and at least three letters of recommendation to: **Dr. Jerry Coyne, Chairman Search Committee, Department of Zoology, University of Maryland, College Park, Md. 20742, by 30 November 1984.**

An Affirmative Action/Equal Opportunity Employer

FACULTY POSITIONS. As part of a major development program, The University of Pennsylvania, Department of Chemistry, expects to add one or two faculty members at the assistant professor (tenure probationary) level beginning September 1985. Candidates at a more senior level may also be considered. The general areas of research interest are **organic and inorganic chemistry**. Candidates in the areas of bio-organic, physical organic, and organometallic chemistry would most complement the current faculty. Applicants should send curriculum vitae, list of publications, a brief statement of research interests, and in addition have a minimum of three letters of recommendation sent to: **J. Kent Blasie, Chairman, Department of Chemistry/D5, University of Pennsylvania, Philadelphia, Pa. 19104, by 15 October 1984.** *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer.*

The Department of Anatomy of the F. Edward Hebert School of Medicine, Uniformed Services University, invites applications for **TWO FACULTY POSITIONS**. Applicants must have either an M.D. or Ph.D. degree in the biological sciences. Teaching assignments involve gross anatomy and/or neuroanatomy and it is expected that applicants will have research experience and/or postdoctoral training. Preference will be given to candidates with research interests in cell biology, endocrinology, or various aspects of neuroscience. Applications should be received by 1 October 1984. Send curriculum vitae, bibliography, statement of teaching and research experience, and three letters of recommendation to: **Malcolm B. Carpenter, M.D., c/o Civilian Personnel, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Maryland 20814-4799.** *Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS

The Department of Biochemistry at The University of Texas Health Science Center at San Antonio invites applications for two tenure-track faculty positions (rank and salary open). Candidates with demonstrated research experience in applying molecular biological approaches to important biochemical problems will receive primary consideration. Interested applicants should send curriculum vitae, copies of selected recent publications, a brief statement of research interests, and names of three references to:

**Faculty Search Committee
Department of Biochemistry
The University of Texas
Health Science Center
7703 Floyd Curl Drive
San Antonio, Texas 78284**

Deadline for applications is 15 November 1984.

Affirmative Action/Equal Opportunity Employer

FACULTY POSITIONS Department of Biological Sciences University of Pittsburgh

The Department of Biological Sciences at the University of Pittsburgh is seeking candidates preferably at the assistant professor level in the general areas of (i) membrane structure and function and (ii) cell and developmental biology. The candidates must have strong backgrounds in biochemistry and molecular biology. The appointees are expected to develop active and distinguished research programs and to teach biochemistry and molecular biology at both the undergraduate and graduate levels. Applicants should send curriculum vitae, plan of future research activities, and the names of three references to:

**Dr. Albert E. Chung
Department of Biological Sciences
University of Pittsburgh
Pittsburgh, Pa. 15260**

The University of Pittsburgh is an Equal Opportunity Employer.

**HEALTH SCIENCE ADMINISTRATION
TRAINING AT THE NATIONAL
INSTITUTES OF HEALTH THROUGH
THE GRANTS ASSOCIATES PROGRAM**

Scientists in health research interested in the challenge of Federal programs supporting research, training, and services in health-related fields may wish to consider the Grants Associates Program of the U.S. Public Health Service at the National Institutes of Health.

The Program offers a limited number of positions per year, on a highly selective basis, that prepare each associate for a leading role in health science administration. For a 12-month period, Grants Associates participate in individually structured training experiences. They have the opportunity to gain on-the-job experience through collaborating with senior scientist administrators, visiting project sites, working with program and project officers and executive secretaries, participating in the evaluation and analysis of grant-supported programs, and attending seminars.

If you hold a doctorate or equivalent in a discipline related to the biomedical or behavioral sciences, have significant independent research experience beyond the doctoral level, and are motivated to health science administration as a profession, you should investigate the opportunities offered by the Grants Associates Program. The salaries for these Office of Personnel Management appointments range from GS-12 (\$30,402) to GS-14 (\$42,722). U.S. citizenship is required.

For further information write: Director, Grants Associate Program, Office of Extramural Research and Training, National Institutes of Health, Building 31, Room 1B-55X, Bethesda, Maryland 20205

An equal opportunity employer.

**NASA/Goddard Space Flight Center
Greenbelt, Maryland**

**Associate Chief
Space Data and Computing Division
and Head
National Space Science Data Center**

NASA/Goddard Space Flight Center is seeking a highly qualified individual to head the National Space Science Data Center (NSSDC). The position is for Associate Chief of the Space Data and Computing Division within the Space and Earth Sciences Directorate. The NSSDC is the principal scientific data center for NASA and operates World Data Center A for rockets and satellites. This center serves as the permanent scientific space data archive and dissemination center and is responsible for the development, management, and operation of specialized data base systems for NASA. Particular disciplinary emphasis is in solar-terrestrial physics and astrophysics. The center develops advanced data base management systems using leading technologies such as high speed mass storage retrieval systems, data base machines and expert systems. The staff consists of approximately 30 civil servants and 100 contractor personnel. The NSSDC operates an expanding computing system currently consisting of a VAX 11/780 and a MODCOMP IV/25 and will have high-speed link to an IBM 3081, a Cyber 205, and a cluster of VAX processors. NSSDC responds to world-wide requests for documentation, data services, and digital and photographic data. As Associate Chief, the incumbent will also participate in formulating the research policy and long-term direction of the Division. The position calls for both technical and managerial leadership of the organization. The appointment is at the GS-15 level, which carries a salary range of \$50,495-\$65,642.

Qualifications: Goddard is seeking a respected and visionary scientist willing to play a strong leadership role at a challenging time. Applicants should possess a Ph.D. or the equivalent experience in one of the following: a space or earth science-related discipline, computer science, or mathematics. Experience of at least 10 years, with increasing responsibility and stature, including management of a substantive technical group. Applicant should have been closely involved with advanced research utilizing scientific satellite data including data management and analysis and experienced in modern computer systems, technology, and telecommunications. In addition, applicant should have a broad understanding of the science areas in which NSSDC is involved.

Applicants: Applicants should submit a curriculum vitae, a list of publications, and Office of Personnel and Management Standard Form 171 (Personal Qualifications Statement) to Dr. Franklin D. Martin, Director of Space and Earth Sciences, Code 600, NASA/Goddard Space Flight Center, Greenbelt, Maryland 20771. Selection will be made by the Director of Goddard Space Flight Center, with the aid of a search committee of recognized experts in appropriate disciplines. **Deadline for applications is October 15, 1984.** NASA is an affirmative action/equal opportunity employer.

PLANT SCIENTIST

John A. Hannah Distinguished Professorship

The John A. Hannah Distinguished Professorship is intended to expand and maintain the excellence of the Michigan State University (MSU) faculty in the broad area of modern plant biology. Applications are being sought for a tenured or tenure-track appointment at the associate or full professor level.

The successful candidate will be expected to maintain an active program in plant molecular or cell biology, genetics, physiology, or biochemistry. The position involves minimal administrative duties or teaching responsibilities. The incumbent will be expected to provide intellectual leadership to, and galvanize a sense of excitement about, plant biology research at Michigan State University.

The successful candidate will hold an academic appointment within an appropriate plant science department in the College of Agriculture and Natural Resources. Laboratory space will be available in one of the several buildings under construction in the plant biology complex. A generous allocation of funds will be available for operations and to equip a new laboratory. Salary is negotiable, depending on the qualifications of the applicant.

Applicants must (i) hold a doctorate in plant molecular or cell biology, genetics, physiology, biochemistry, or related fields, (ii) be recognized scholars with demonstrated research excellence, and (iii) have demonstrated actual or potential national or international leadership in their fields of research.

Curriculum vitae and names of three to five references should be sent to: **Dr. N. Edward Tolbert, Hannah Chair Search Committee, 313 Biochemistry Building, Michigan State University, East Lansing, Michigan 48824.** Inquiries for further information should be sent to the same address. Closing date for receipt of applications is 1 November 1984 or until a suitable candidate is identified.

MSU is an Affirmative Action/Equal Opportunity Institution.

MOLECULAR BIOLOGIST

ASSISTANT OR ASSOCIATE PROFESSOR

The Department of Pharmacology and Cell Biophysics of the University of Cincinnati College of Medicine is inviting applications for a tenure-track position at the assistant/associate professor level. Training in molecular biology is required. The major criterion for selection will be research excellence. Teaching duties will be minimal. Candidates will be expected to establish an independent research program. Research direction should complement a department whose main interest is in various aspects of muscle regulation with emphasis on muscle proteins, calcium regulation and membrane proteins. A Program Project Grant (Cellular Mechanisms of Heart Failure) and Training Grant (Cardiovascular Biology) provide major support for research and training. Send curriculum vitae, names of three references and a statement of research goals by November 1, 1984 to:

Dr. Robert L. Jackson
Molecular Biology Search Committee
Department of Pharmacology and Cell Biophysics
University of Cincinnati College of Medicine
231 Bethesda Avenue
Cincinnati, Ohio 45267-0575

An Equal Opportunity/
Affirmative Action Employer

POSITIONS OPEN

FACULTY POSITIONS VIROLOGISTS AND IMMUNOLOGISTS West Virginia University Medical Center

Three tenure-track positions (assistant/associate professor) available January 1985 in the Department of Microbiology, School of Medicine, West Virginia University Medical Center. Successful applicants must be able to establish a strong research program in one of the following areas: Molecular virology, tumor virology, viral immunology, mechanisms of viral infection, molecular and cellular immunology, immunogenetics, regulation of cellular immunity. Other areas of virology and immunology will be considered. Applicants must also be interested in teaching in the medical and graduate programs.

Applications will be accepted through 15 October 1984. Send curriculum vitae, names of three references, and a description of research interests to: **Dr. Irvin S. Snyder, Department of Microbiology, West Virginia University Medical Center, Morgantown, W. Va. 26506.** West Virginia University is an Affirmative Action/Equal Opportunity Employer.

The University of Michigan Medical School, Department of Radiology, has on occasion open **FACULTY POSITIONS** within the department and its affiliated hospitals. Physicians filling these positions will take part in the programs of patient care, teaching, and research in the Department of Radiology. They will supervise the activities of house officers and aid in the teaching of house officers and medical students. Qualified applicants must be American Board of Radiology-certified or Board-eligible. Previous training or work experience in an academic institution as well as demonstration of previous academic research and teaching experience are desirable. Academic rank will depend on qualifications and experience. Interested applicants should contact: **William Martel, M.D., Chairman, Department of Radiology, The University of Michigan Medical School, Ann Arbor, Michigan 48109.** A Nondiscriminatory, Affirmative Action Employer.

FACULTY POSITION IN DERMATOLOGY. The Department of Dermatology, University of Michigan Medical School, is searching for an **Instructor through Full Professor.** The primary responsibility will be basic research with some teaching and patient care. Candidates must be Board-certified or -eligible in dermatology and have suitable training in dermatologic research. The salary is negotiable. A departmental subsidy for supplies and travel is available. Research grants are available from the Veterans Administration Medical Center. Well-equipped laboratory space. The position will be available October 1984. Address applications including curriculum vitae to: **John J. Voorhees, M.D., Professor and Chairman, Department of Dermatology, University of Michigan Medical School, C-2064 Outpatient Building, Ann Arbor, Michigan 48109-0010.** The University of Michigan is a nondiscriminatory, Affirmative Action Employer, code 42.

FACULTY POSITION-BIOCHEMISTRY

The Department of Biochemistry, University of Kansas Medical Center, is seeking to fill a tenure-track faculty position at the level of assistant or associate professor. Candidates should have a Ph.D. in biochemistry or in a related field. Preference will be given to individuals who currently have or can develop an active research program utilizing recombinant DNA technology. Teaching is in medical and graduate biochemistry. Candidates are requested to send curriculum vitae, summaries of current and proposed research, and the names of three references to: **Dr. K. E. Ebner, Chairman, Department of Biochemistry, University of Kansas Medical Center, Kansas City, Kans. 66103.** Applicant evaluation will begin as received and continue until a suitable candidate is found. An Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION. The Department of Physiology, Texas College of Osteopathic Medicine, is accepting applications for a tenure-track faculty position at the rank of assistant or associate professor. Applicants should have excellent teaching ability and a strong ongoing research program related to cardiovascular physiology. Letters of application accompanied by curriculum vitae should be sent to: **Dr. Carl E. Jones, Chairman of Department of Physiology, Texas College of Osteopathic Medicine, Camp Bowie at Montgomery, Fort Worth, Texas 76107.** Applications must be received by 1 December 1984. Texas College of Osteopathic Medicine is under the direction of the North Texas State University Board of Regents and is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

FACULTY POSITIONS

MEDICAL MICROBIOLOGISTS. The University of North Carolina—Centers for Disease Control Laboratory Practice Training Program (for the training of laboratory directors) in the Department of Parasitology and Laboratory Practice of the School of Public Health is seeking applications for two faculty positions, one in bacteriology and the other in virology. These tenure-track positions will be at the level of assistant or associate professor and will begin 1 July 1985. Preference will be given to those with experience in a clinical or public health laboratory. Applicants must have a doctorate, postdoctoral experience, and demonstrated potential for excellence in teaching and research. The successful candidates will be expected (i) to teach courses in the area of their competence and (ii) to establish a vigorous, independent research program that is germane to the modern public health or clinical laboratory.

Applicants should send curriculum vitae, a one- to two-page statement of teaching and research interests, three letters of recommendation, and reprints to: **Chairman, Laboratory Practice Search Committee, Department of Parasitology and Laboratory Practice, 360 Rosenau Hall 201H, University of North Carolina, Chapel Hill, N.C. 27514** by 1 November 1984. Minorities and women are encouraged to identify themselves voluntarily. The University of North Carolina is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITIONS AVAILABLE

The Department of Cell Biology and Anatomy, Oregon Health Sciences University, School of Medicine, invites applications for assistant professor, tenure-track positions. Applicants should have at least 2 years of postdoctoral training and excellent research potential in modern molecular, genetic, and/or immunological approaches to study of cell regulation and function. The successful candidate will be expected to participate in the teaching of cell/molecular biology, histology, gross anatomy, or neuroscience. Interested candidates should forward their curricula vitae, reprints, statements of research objectives, and the names of three references to: **Search Committee, Department of Cell Biology and Anatomy, Oregon Health Sciences University, School of Medicine, Portland, Oregon 97201.**

The Oregon Health Sciences University is an Affirmative Action/Equal Opportunity Employer.

FACULTY POSITION

Senior-level faculty position with tenure at the University of California, Berkeley, School of Optometry, is available for the 1985-1986 academic year, or earlier. Doctoral degree with postdoctoral research experience or equivalent is required. Research interests should include basic and applied problems in corneal physiology. An interest in physiological properties associated with contact lens use is desirable. Preference will be given to candidates with training in biophysics, physiology, or bioengineering. A strong commitment to excellence in teaching, at both the professional and graduate levels, is required.

Curriculum vitae, statement of research and teaching interests (and background in each), graduate and undergraduate transcripts, lists and reprints of published works, and names and addresses of at least three references should be sent to:

Professor Robert Mandell
Chairman, Search Committee
School of Optometry
University of California
Berkeley, California 94720

Applications will be accepted until 15 October 1984. The University of California is an Affirmative Action/Equal Opportunity Employer.

FOREST GENETICIST

Assistant professor, 12-month tenure-track position available 1 January, to conduct research in tree genetics/tree improvement, principally with hardwoods. Teaching includes courses in forest genetics and dendrology. Requires Ph.D. in tree genetics or related area with a background in forestry. Send letter of application, complete résumé, transcripts, and names of three references by 26 October to: **Dr. Gary L. Hergenrader, Head and State Forester, Department of Forestry, Fisheries and Wildlife, University of Nebraska-Lincoln, Lincoln, Nebraska 68583-0814.** Affirmative Action/Equal Opportunity Employer.

Postdoctoral Research Scientist/Plant Molecular Biology

The Molecular Biology Department of Zoecon Corporation is seeking a Postdoctoral Scientist to join a program studying fundamental aspects of gene regulation in plant cells.

Strong preference will be given to candidates with experience in recombinant DNA techniques and plant molecular biology.

Zoecon Corporation, a subsidiary of Sandoz, has been a leader in innovative biological research for over 15 years. This broadly based agricultural biotechnology firm has established research programs in molecular biology, plant tissue culture, plant pathology, and insect physiology.

Our research laboratories are located in Palo Alto, California, in close proximity to Stanford University. We conduct our research in an open, academic-like environment which strongly encourages publication and interaction with other scientists throughout the world.

Please send CV and names of three references to: **Carole Hurd, Zoecon Corporation, 975 California Avenue, Palo Alto, CA 94304. E.O.E.**

zoecon
A SANDOZ COMPANY

ANNOUNCEMENT

SCHOOL OF PUBLIC AND ENVIRONMENTAL AFFAIRS INDIANA UNIVERSITY

The School of Public and Environmental Affairs provides graduate and undergraduate degree programs, as well as research, professional, and technical services on the Bloomington, East (Richmond), Fort Wayne, Indianapolis, Northwest (Gary), and South Bend Campuses of Indiana University. Recruiting is under way for the 1985-1986 academic year for the areas and locations listed below. Teaching at graduate and undergraduate levels will be expected, along with demonstrated ability to establish an active research program. All applicants should have appropriate terminal degree and/or demonstrations of equivalent research/creative abilities. When you respond, please indicate the position(s) for which you are applying.

ENVIRONMENTAL TOXICOLOGIST (Rank Open)—Particular consideration will be given to candidates with experience in the chronic effects of trace levels of pollutants. Should have doctoral degree from recognized toxicology program, ability to establish an active research group in their specialty as well as to participate in multidisciplinary research projects. At least 1 year of postdoctoral research experience preferred (**BLOOMINGTON CAMPUS**).

ENVIRONMENTAL TOXICOLOGIST (Rank Open)—Particular consideration will be given to candidates with experience in the chronic effects of trace levels of pollutants. Should have doctoral degree from recognized toxicology program, ability to establish an active research group in their specialty as well as to participate in multidisciplinary research projects. At least one year of postdoctoral research experience preferred (**BLOOMINGTON CAMPUS**).

WASTE MANAGEMENT ENGINEERING (Rank Open)—Experience in engineering aspects of solid and hazardous waste management is required. Applicants should have a terminal degree in civil or environmental engineering or closely related field. Particular consideration will be given to applicants who have interests and experience in multidisciplinary research and teaching (**BLOOMINGTON CAMPUS**).

Interested applicants should send curriculum vitae to the address listed below no later than 15 January 1985.

**Dr. Roy Jumper, Associate Dean
School of Public and Environmental Affairs
Indiana University
Bloomington, Ind. 47405**

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

Director, Biological Sciences

Allergan's commitment to the discovery and development of new eye and skin care products has made us a world leader in these markets. To ensure our continued success, we are searching for an individual to direct our Discovery Research Biological Science groups (biochemistry and pharmacology) for the development of new drugs. This is an excellent opportunity for a highly creative individual with a PhD in a Biological Science plus 10 years experience in the pharmaceutical industry and a successful track record.

Experience our research team where achievement is recognized and rewarded. We offer a competitive compensation and benefits package, a creative scientific environment, and a beautiful campus-like setting in Southern California. Please send your resume to: **Allergan Pharmaceuticals, A Smith-Kline Beckman Company, Dept. AS, 2525 Dupont Drive, Irvine, CA 92715. Equal Opportunity Employer.**



CSIRO AUSTRALIA RESEARCH FELLOW A\$25,342 to A\$37,274 DIVISION OF SOILS ADELAIDE, SA

CSIRO conducts scientific and technological research in laboratories located throughout Australia and employs about 7500 staff, of whom some 2900 are professional scientists. The organization's research activities are grouped into five Institutes: Animal and Food Sciences, Biological Resources, Energy and Earth Resources, Industrial Technology, and Physical Sciences. The CSIRO Division of Soils is a member of the Institute of Biological Resources.

FIELD: Plant physiology/biophysics.

GENERAL: The CSIRO Division of Soils conducts research into most aspects of soil science, including the physics, chemistry, and biology of soils, and the integrative disciplines of pedology and geomorphology. It also seeks the application of its research in agriculture and in other areas of science and technology. The division has laboratories in Adelaide, Brisbane, Canberra, and Townsville.

DUTIES: The appointee will undertake research on the movement of water both to and from plants. Initially, the research will evaluate the usefulness of the natural isotopes deuterium and oxygen-18 to elucidate details of the mechanism of water loss from plants.

The appointee will be based at the division's Adelaide laboratory which is equipped with a VG602 mass spectrometer and extensive growth cabinet and glasshouse facilities.

QUALIFICATIONS: Applicants should have a Ph.D. degree or equivalent qualifications with training in some aspects of plant science. Some knowledge of physics would be an advantage.

TENURE: The appointment is for a 3-year period, with Australian government superannuation benefits available. The position will be available from March 1985.

APPLICATIONS: Stating full personal and professional details, the names of at least two scientific referees, and quoting reference number A0997, should be directed to:

**The Chief
CSIRO Division of Soils
Private Bag Number 2
Glen Osmond, SA 5064
Australia**

by 12 October 1984.

CSIRO is an Equal Opportunity Employer

COASTAL POLLUTION

Its Impact on Marine Organisms and Ecosystems

November 29, 30 and December 1, 1984
at the

Marine Biological Laboratory
Woods Hole, Massachusetts

Sponsored by: The Tufts University School of
Veterinary Medicine
Boston, Massachusetts

Speakers Include: R. Ackman, J. Capuzzo, J. Grassle, E. Goldberg, D. Malins, N. Nielsen, C. Oviatt, C. Reinisch, R. Sonstegard, J. Stegeman, J. Teal, G. Woodwell.

Topics Include: The diagnosis of marine invertebrate diseases using monoclonal antibodies; the impact of PCBs and other industrial pollutants on marine organisms; sublethal indices of population stress; the search for primordial retroviruses in marine invertebrates; where, how and if industrial wastes should be disposed of in the marine environment. Poster sessions will be held Thursday and Friday evenings.

For Further Details and Registration
Forms Contact: Dr. Carol L. Reinisch,
T.U.S.V.M., 136 Harrison Avenue, Boston,
MA 02111 U.S.A. Telephone: (617) 956-6923

THE UNIVERSITY OF ADELAIDE WAITE AGRICULTURAL RESEARCH INSTITUTE

invites applications from both men and women for the following position:

WAITE CHAIR OF ENTOMOLOGY (Tenurable)

(Reference: E1080). The chair is in the Department of Entomology which was founded in 1928 and has since that time been concerned principally with the applied ecology of insects and related organisms and with associated physiological and behavioural studies.

The chair has become available following the retirement of Professor T. O. Browning.

SALARY: A\$51,006 per annum (currently under review). The University of Adelaide operates a superannuation scheme, membership of which is obligatory.

FURTHER INFORMATION: Statements setting out the formal terms and conditions of appointment and providing details about the University, the Waite Agricultural Research Institute, and the Department of Entomology, are obtainable from the registrar of the university. Any further information about conditions of appointment or about the university should be sought from the registrar. Further information about research and facilities at the Waite Agricultural Research Institute and in the Department of Entomology may be obtained from the institute's director, Professor J. P. Quirk, A.O., F.T.S., F.A.A. It is university policy to encourage women to apply for appointment to tenurable academic positions.

Holders of full-time tenured or tenurable academic appointments have the opportunity to take leave without pay on a half-time basis for a specific period of up to ten years where this is necessary for the care of children.

APPLICATIONS, IN DUPLICATE, quoting reference number E1080 and giving full personal particulars (including residential status), details of academic qualifications, and names and addresses of three referees should reach: The Senior Assistant Registrar (Personnel) at the University of Adelaide, GPO Box 498, Adelaide, South Australia, 5001, Telex UNIVAD AA 89141 not later than 19 October 1984.

The University reserves the right not to make an appointment or to appoint by invitation.

POSITIONS OPEN

FIELD REPRESENTATIVES. Marine education facility in the Florida Keys. Responsible for contacting and recruiting public and private schools and special interest groups. Sales/biology background encouraged. Relocation to Big Pine Key required. Some travel throughout south Florida. Immediate opening. Send résumé in confidence to: Director, Newfound Harbor Marine Institute, Route 3, Box 170, Big Pine Key, Fla. 33043. For more information, telephone: Dave at 305-872-2205.

SCRIPPS INSTITUTION OF OCEANOGRAPHY/ GEOCHEMISTRY. Applications are invited for a tenure-track faculty position in the general field of geochemistry and petrology, including inorganic/ physical marine chemistry, marine biogeochemistry, geochemistry of sedimentary, metamorphic, and igneous rocks, fluid-rock interactions, theoretical and experimental petrology, and organic geochemistry. The position will involve graduate-level teaching and the supervision of graduate student research. The level of the appointment will depend on the applicant's qualifications. Applicants must hold Ph.D. degree and have demonstrated excellence and independence in research. Associate or professorial level candidates must demonstrate a strong research record in their specialization; assistant level candidates will be expected to show evidence for their potential through publication record appropriate for their experience and letters of recommendation. Send letter of application and curriculum vitae, including description of research interests, and names of three references to: Chairman, Graduate Department, A-008, Scripps Institution of Oceanography, University of California, San Diego, La Jolla, Calif. 92093. Closing date for applications is 1 November 1984. An Equal Opportunity/Affirmative Action Employer.

IMMUNOLOGIST

Merck Sharp and Dohme Research Laboratories has an immediate opening for an immunologist in the hybridoma group in the Immunology and Inflammation Research Department. The successful candidate must have a B.S. or M.S. degree in immunology or related area. Experience in cell culture and immunological procedures is desirable. Responsibilities will include routine animal work, generation of hybridomas, and the production and characterization of monoclonal antibodies.

Salaries and benefits are excellent. Send curriculum vitae to: May C. Habbersett, Merck & Co., Inc., P.O. Box 2000, Rahway, N.J. 07065.

IMMUNOLOGIST/CELL BIOLOGIST. Ph.D. for research on immune response to cartilage in human arthritis. Antigen/antibody purification/measurement, cellular immune assessment, cell culture. Rank/salary commensurate with experience. Excellent facilities, living conditions. Résumé, publications, three references to: Paul E. Phillips, M.D., Chief of Rheumatology, Upstate Medical Center, 750 East Adams Street, Syracuse, N.Y. 13210. Equal Opportunity/Affirmative Action Employer.

MATHEMATICAL ECOLOGY

Tenure-track assistant professorship

Active research on theoretical problems concerning ecological dynamics and an ability to teach a rigorous, wide-ranging graduate course in mathematical ecology are required. Those who combine important theory development with laboratory and/or field work may have an advantage. Please submit curriculum vitae (including biographic data), short statement of research objectives, names of at least five referees, and selected reprints to: The Chairman, Department of Zoology, University of Texas at Austin, Austin, Tex. 78712, before 1 November 1984. The University of Texas at Austin is an Equal Opportunity/Affirmative Action Employer.

MOLECULAR BIOLOGY

One or more positions, assistant professor through endowed professorship

Active research program in molecular biology of gene expression of metazoans. Those who combine an active research program in molecular biology and its relation to genetics, developmental biology, and so forth, may have an advantage. Molecular biology is an expanding well-endowed field at the University of Texas at Austin. Please submit curriculum vitae (including biographic data), short statement of research objectives, names of at least five referees, and selected reprints to: The Chairman, Department of Zoology, University of Texas at Austin, Austin, Tex. 78712, before 1 November 1984.

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

POSITIONS OPEN

MARINE CHEMIST. The Chemistry Department of the Woods Hole Oceanographic Institution plans to make a tenure-track appointment as assistant scientist and invites applications from researchers with interest in the field of marine chemistry. Applicants should have a Ph.D., and, preferably, postdoctoral experience with a demonstrated interest in natural systems and strong basic physical, organic, or analytical chemistry background to study chemical processes in marine systems. Experience with techniques in reaction kinetics and mass spectrometry would be particularly valuable. Interested candidates should send résumé, transcript, reprints, and names of potential referees to: Personnel Manager, Box 54P, Woods Hole Oceanographic Institution, Woods Hole, Mass. 02543. An Equal Opportunity Employer.

MARINE FISHERIES BIOLOGIST/SEARCH EXTENDED. Applications are invited for a 9-month, tenure-track appointment at the assistant professor level for a fisheries biologist, starting date 1 February 1985 or 1 September 1985. Responsibilities will include teaching courses in marine fisheries and population dynamics to undergraduate and graduate students. Ph.D. required. Salary commensurate with experience. Preference will be given to candidates who can demonstrate potential for developing a strong marine fisheries research program by attraction of external funds, have a strong quantitative background, and have expertise in population dynamics. Applicants should send a résumé and a statement of research interests, and arrange to have three letters of reference sent to: Dr. John T. Finn, Chairman/Search Committee, Department of Forestry and Wildlife Management, Holdsworth Hall, University of Massachusetts, Amherst, Mass. 01003. Application deadline: 15 October 1984. The University of Massachusetts is an Affirmative Action/Equal Opportunity Employer.

MEDICAL RESEARCH ASSOCIATE. to be involved in a research program concerning the molecular and functional characterization of smallpox/orthopoxvirus-related virus genomes. Ph.D. in microbiology and strong background in virology and biochemistry, with expertise in tissue culture, as well as knowledge of immunology and some exposure to hybridoma and gene cloning techniques. Salary: \$16,000 per year. Contact: The Employment Security Commission, 516 North Mangum Street, Durham, North Carolina, or the Job Service Office nearest you. Reference Job Order Number: 4106819. Affirmative Action/Equal Opportunity Employer.

MICROBIOLOGIST. Ph.D. Tenure-track faculty position to begin fall 1985. Duties: Teach undergraduate courses in microbiology, introductory biology, possibly genetics, and eventually develop an elective in area of expertise, participate in graduate program, advise students, and serve on committees. Research is expected. Qualifications: Ph.D. with 3 years of teaching and/or research experience, strong background in biochemistry, molecular biology, and genetics. Rank: Assistant professor; salary: \$18,000 to \$28,500, depending upon experience. Send curriculum vitae, transcripts, and have three reference letters sent by 1 November 1984 to: Chairperson, Hiring Committee, Biology Department, Towson State University, Baltimore, Md. 21204. An Equal Opportunity/Affirmative Action Employer.

ORTHOPEDIC BIOMECHANICAL ENGINEER

West Virginia University
School of Medicine

West Virginia University School of Medicine invites applications from experienced biomechanicians for a tenure-track faculty position with joint appointments in the Departments of Orthopedic Surgery and Mechanical Engineering.

Candidates must hold a Ph.D. in mechanical engineering and have a background in mechanical testing and motion analysis. Position involves research and teaching.

Salary and rank will be commensurate with experience.

Application with résumés should be directed to:

Eric L. Radin, M.D.
Professor and Chairman
Department of Orthopedic Surgery
West Virginia University School of Medicine
3606 Basic Sciences Building
Morgantown, West Virginia 26505

West Virginia University is an Affirmative Action/Equal Opportunity Employer.

Immunopharmacologist

Ph.D. Level

Continued expansion at the Warner-Lambert/Parke-Davis Pharmaceutical Research Division has generated an immediate opening within the Immunoinflammatory Group within the Pharmacology Department. This position will occupy a key role in our team committed to the discovery of novel immunomodulatory drugs for the treatment of rheumatoid arthritis.

The successful candidate will have:

- Ph.D. or equivalent in cellular immunology and up to five years postdoctoral experience with a documented record of research excellence.
- Strong background in basic immunology with emphasis on lymphocyte products, interactions, and phenotypes as well as familiarity with the most current methodology used to study these.
- Experience in establishing test procedures which can be used to characterize specific immunological effects of synthetic compounds and to probe biochemical mechanisms of action.
- Excellent verbal and written communication skills, with prior supervisory experience highly desirable.

Our research facilities adjacent to the University of Michigan campus in Ann Arbor, Michigan are among the finest and best equipped in the world and are devoted exclusively to the discovery and development of new drugs. We offer excellent compensation, benefits and work environment. Send resume with salary requirements and references in confidence to: Ms. D. Love, Human Resources Supervisor, WARNER-LAMBERT/PARKE-DAVIS, Dept. 3084, 2800 Plymouth Road, Ann Arbor, MI 48105.

An Equal Opportunity Employer M/F/H

**WARNER
LAMBERT**

Molecular and Cell Biologist- Cancer Research

The Cancer/Virus Research Department of the Research Division of The Upjohn Company is seeking two scientists, one with molecular biology training and experience and one with cell biology. Responsibilities include the isolation, characterization, and utilization of cancer-related genes as part of a discovery process for new anticancer therapy. Tumor cell biology research efforts include the isolation, characterization of growth factors, oncogene products, and/or cytokines to understand effects of such regulatory agents on differentiation and proliferation. Significant collaboration with departmental cell biologists and biochemists as well as molecular biologists in related departments is anticipated.

The qualifications for both positions include a Ph.D., or equivalent degree in microbiology, molecular biology, cell biology, biochemistry or related fields with emphasis on the study of cancer-related genes and expression products; postdoctoral experience desirable. A demonstrated ability to conduct original, independent research, and good communication skills are required.

Upjohn offers a stimulating research environment, career potential, competitive salary (commensurate with experience) and an outstanding benefits package. Publication of research data is encouraged, and it is expected that the successful candidates will attain peer recognition for their scientific accomplishments.

For confidential consideration, please send a current c.v. and resume, list of publications, names and addresses of references, and graduate transcripts (if appropriate) to: **Gerald L. Potratz, Department 16861, The Upjohn Company, 7000 Portage Road, Kalamazoo, MI 49001.**

Upjohn

A Century of Caring

An Equal Opportunity Employer M/F/H/V

Wesfarmers Algal Biotechnology Pty Ltd Australia

Wesfarmers Algal Biotechnology Pty Ltd, a subsidiary of Westralian Farmers Co-operative Limited, is conducting a Public Interest Project on behalf of the Commonwealth Government. The project's aim is to determine the commercial feasibility of setting up an algal biotechnology-based industry in Australia.

Research and development work will be undertaken at laboratories in Bayswater, Perth, and pilot plant trials at Hutt Lagoon, 100 km north of Geraldton, Western Australia. There is a well-equipped field laboratory at the pilot plant. The following positions are available:

MICROALGAL CULTURE

RESEARCH SCIENTIST

A scientist with PhD or equivalent, and relevant post-doctoral experience, is sought to head a project on commercial development of blue-green algal culture, reporting directly to the Research Director. Experience with mass culture techniques is desirable and a background in physiology of micro-algae is an advantage.

BRINE SHRIMP CULTURE/AQUACULTURE

RESEARCH SCIENTIST

A scientist with a PhD or equivalent and relevant post-doctoral experience is sought to head a project on commercial culture of brine shrimp, reporting directly to the Operations Manager. Experience with laboratory culture, physiology and biochemistry of brine shrimp is required. A knowledge of mass culture methods and aquaculture systems involving microalgae and brine shrimp is an advantage.

BIOCHEMISTRY

RESEARCH SCIENTIST

A scientist with PhD or equivalent and relevant post-doctoral experience is sought to lead a group with the following tasks.

- * development of large-scale methods of extraction of products from microalgal biomass. Products include pigments, vitamins and fine chemicals;
- * development of some chemical methods of harvesting microalgae;
- * development of methods of stabilisation and formulation of algal meals for animal feeds;
- * routine analysis by HPLC, spectrophotometry and chromatography of the products of algal cultures.

A strong background in biochemistry particularly of plant or algal products is required. Additional experience in algal physiology, pigment chemistry or nutrition sciences would be an advantage. This position reports directly to the Research Director.

Technical support staff for these scientists are also being sought.

All positions are offered as contracts for one year, with the option of a further year. Salaries will be negotiated on the basis of qualifications and experience. Some removal expenses will also be negotiated.

All applications close 28 September, 1984. Please give the position title when applying, and address applications to:

**Dr L. J. Borowitzka,
Research Director,
Wesfarmers Algal Biotechnology Pty Ltd,
2-6 Railway Parade,
BAYSWATER WA 6053
AUSTRALIA**

POSITIONS OPEN

MOLECULAR BIOLOGIST—VIROLOGIST. The Department of Radiation Oncology at the University of Massachusetts Medical School seeks applicants for two tenure-track positions at the assistant professor level. A Ph.D. degree in an appropriate discipline with postdoctoral experience in molecular genetics relating to cell and development biology or virology is required. Departmental affiliation with molecular genetics and microbiology is possible. Successful candidates will be expected to conduct independent research, assume some teaching responsibilities, and supervise graduate student research. The positions are available 1 December 1984, with salary commensurate with candidates' experience. Please submit curriculum vitae, a statement of research goals and support, three letters of reference, and recent reprints to: **R. J. Eckner, Ph.D., Director of Research, MBVL, Department of Radiation Oncology, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605.** An Affirmative Action/Equal Opportunity Employer.

MUSEUM DIRECTOR, IDAHO MUSEUM OF NATURAL HISTORY. The museum is a state-supported unit of Idaho State University with major collections in paleontology, archeology, botany, and ethnography. Duties of the director include fundraising, budget management, working with professional curators, general responsibility for educational programs, and supervising the interpretive materials for a diversified public. It is desirable that applicants have an advanced degree in biological science, anthropology, or museology, and have experience in museum or related management involving public-interest programs. The appointment is a permanent, 12-month, nonacademic position at a salary of \$29,000 to \$30,000. Deadline for applications, including at least three letters of evaluation, is 1 November 1984. Applications and letters solicited by applicant should be sent directly to: **Edwin W. House, Chairperson, Museum Search Committee, c/o Victor S. Hjelm, Dean, College of Arts and Sciences, Campus Box 8087, Idaho State University, Pocatello, Idaho 83209.** An Equal Opportunity/Affirmative Action Employer.

FINSEN INSTITUTE COPENHAGEN / DENMARK HEAD OF FINSEN LABORATORY

Applications are invited from suitably qualified candidates for the post of Medical Director of Finsen Laboratory, which is the experimental research laboratory of Copenhagen's oncology hospital, Finsen Institute / Rigshospitalet (State University Hospital).

On an administrative level, Finsen Institute falls under the responsibility of Rigshospitalet. Within the next five years, the Institute's facilities will be moved to the Rigshospitalet complex.

Finsen Laboratory carries out experimental cancer research relating to the clinical work of Finsen Institute. The successful applicant will be expected to lead a team of scientific researchers and actively participate in the development of future research programmes. Candidates should therefore hold a medical degree and have considerable experience in experimental cancer research.

The post falls within grade 37 of the Danish Civil Service salary structure (Dkr287,341). In addition a yearly allowance of Dkr57,910 will be granted. The Board of Rigshospitalet may, at their discretion, require the successful completion of a 2 year probation period before making a permanent appointment.

Further written particulars in English may be obtained from the Board of Rigshospitalet.

Applications (5 copies) and 6 copies of scientific works published to date should be addressed to Her Majesty, the Queen, and sent, not later than October 1 1984, to:

**Rigshospitalet
Att: Direktionen
Blegdamsvej 9
2100 Ø
Copenhagen
DENMARK**

POSITIONS OPEN

PHARMACOLOGY POSTDOCTORAL POSITION for development of single-cell assay for proteases and studying their roles in diseases. Experience in peptide chemistry, fluorescence microscopy, or cell biology desirable. Ph.D. degree in biology sciences is required, and 1 year of laboratory experience in biochemistry or related field is preferred. Send résumé and three letters of recommendation to: **Professor C. W. Wu, Department of Pharmacology, 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 1884.

POSTDOCTORAL FELLOW—The Department of Medicine, Uniformed Services University of the Health Sciences, is seeking applicants for a postdoctoral fellow position. Minimum qualifications are a Ph.D. degree with a background in biochemistry and molecular biology. Applicants will be responsible for execution of an investigation into hepatotoxic interactions of ethanol and specific nutritional deficiencies. Willingness to learn cell culture technique is important. Salary based on applicant's qualifications. Interested candidates should submit curriculum vitae, bibliography, and names of three references to: **Directorate of Civilian Personnel, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Maryland 20814-4799.** Applications will not be returned. *The Uniformed Services University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION is available immediately to investigate regulation of the expression of protein synthesis factors at the transcriptional and translational level in tumor cells using recombinant DNA technology. Experience in cDNA cloning and screening of genomic libraries desirable. Support available for at least 2 years. Send curriculum vitae and names of three references to: **Dr. L. I. Slobin, Department of Biochemistry, University of Mississippi Medical Center, 2500 North State Street, Jackson, Miss. 39216-4505.** Equal Opportunity Employer, M/F/H/V.

POSITIONS OPEN

PHYSICIAN-GENETICIST to develop a molecular genetic laboratory at Children's Hospital Medical Center in Oakland, California. The successful candidate will join the existing program of the Medical Genetics Unit under the direction of Sanford Sherman, M.D. In addition to pursuing his/her own research interests, there will be opportunity for clinical activity. This position is fully funded. The proximity to the University of California, Berkeley, the already established ties with the University of California, San Francisco, as well as private genetic facilities in the Bay Area, make this a very attractive position. Applicants should have a strong laboratory background with publications of appropriate nature. Send curriculum vitae and references to: **Ruth Robinson, Human Resources, Children's Hospital Medical Center, 51st and Grove Streets, Oakland, Calif. 94609.** An Equal Opportunity Employer, M/F.

PHYSIOLOGY. The Department of Physiology of Creighton University is in immediate need of an assistant professor capable of teaching either respiratory or nervous system physiology to medical students. Contact: **D. F. Magee, M.D., Ph.D., Chairman, Department of Physiology, Creighton University, School of Medicine, 2500 California Street, Omaha, Nebr. 68178.** An Equal Opportunity Employer.

POSTDOCTORAL—CYTOGENETICS— MOLECULAR GENETICS

A **POSTDOCTORAL FELLOWSHIP** position is available for recent Ph.D. interested in the cytogenetic analysis of human tumors, chromosomal localization of various relevant genes including proto-oncogenes, and the rearrangement of proto-oncogenes as a result of nonrandom chromosomal abnormalities in tumors. Experience in the analysis of banded human chromosomes is essential. Applicants should send curriculum vitae and names of three references to: **Dr. Janet D. Rowley, Box 420, Section of Hematology/Oncology, The University of Chicago, 5841 South Maryland Avenue, Chicago, Illinois 60637.**

The University of Chicago is an Equal Opportunity Employer.

POSTDOCTORAL POSITIONS Institute for Molecular and Cellular Biology at Indiana University

Funded postdoctoral positions are available in a new research institute with a strong program of basic research in cell biology, developmental biology, genetics, molecular biology, and plant biology. The institute is located on the Bloomington campus, a stimulating cultural, academic, and research center in the wooded hills of southern Indiana. Initial appointments will be made starting 1 January 1985. The Fellows of the Institute are:

Thomas Blumenthal
J. Jose Bonner
Yean Chooi
Martha Crouch
Heidi Hamm
Joyce Heckman
George Hegeman
Thomas Kaufman
William Klein

Alfred Lewin
George Malacinski
James McDonough
Marc Muskavitch
Norman Pace
Barry Polisky
John Preer
Frank Putnam
Elizabeth Raff

Rudolf Raff
Walter Ream
John Richardson
Rollin Richmond
Drew Schwartz
John Sinclair
Susan Strome
Stefan Surzycki
Milton Taylor
Robert Togaasaki

Information on faculty research programs is available from individual faculty or from the institute. Applications, including curriculum vitae, the names of three references, and a statement of research interests, should be sent to: **The Director, Institute for Molecular and Cellular Biology, Jordan Hall 320A, Indiana University, Bloomington, Indiana 47405.**

An Equal Opportunity/Affirmative Action Employer



INDIANA UNIVERSITY

**INSTITUTE FOR MOLECULAR
AND CELLULAR BIOLOGY**

BIOTECHNOLOGY

- **FERMENTATION**
- **PROTEIN BIOCHEMISTRY**
- **MAMMALIAN CELL CULTURE**

SmithKline & French Laboratories, a leader in pharmaceutical research is seeking research scientists (Ph.D./M.D./D.V.M./M.S./ B.S.) to participate in an ongoing expansion in the development of biopharmaceutical products.

Fully equipped research facilities will be available at our research center in suburban Philadelphia.

SmithKline & French Laboratories is committed to scientific excellence and we encourage staff to publish, to hold adjunct academic posts, and to interact fully with the scientific community.

We are seeking outstanding individuals at all seniority levels who have expertise in one or more of the following areas:

PROTEIN ISOLATION AND PURIFICATION (Research and Large Scale)

(ref: BT-1)

Isolation and purification of proteins produced by recombinant DNA technology/experience in state-of-the-art protein, glycoprotein, biomacromolecule purification techniques: ion exchange chromatography, batch chromatography, size exclusion chromatography, electrophoresis, ultrafiltration, extraction, HPLC, immobilization/experience in developing large scale processes to meet FDA, GMP requirements for biopharmaceutical products.

AMINO ACID ANALYSIS AND SEQUENCE

(ref: BT-2)

Amino acid analysis and sequence analysis of proteins to facilitate purification/experience in modern analytical techniques.

FERMENTATION TECHNOLOGY

(ref: FT-1)

Fermentation methods/whole cell and enzyme immobilization/biochemical and fermentation process engineering/experience with recombinant DNA organisms/yield improvement/process development to meet FDA, GMP requirements for biopharmaceutical products.

MAMMALIAN CELL CULTURE

(ref: FT-2)

Research and large scale mammalian cell culture/process engineering and development/yield improvement.

We offer excellent compensation and benefits, an attractive relocation policy and a work environment that offers substantial opportunity for personal and professional advancement. For confidential consideration, send C.V., salary expectations and names of three references, citing the appropriate reference number listed above to: Mr. Walter B. Flagg, Senior Employment Consultant, SmithKline Beckman Corporation, 1586 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

SK&F
A SmithKline Beckman Company

POSITIONS OPEN

Position available. POSTDOCTORAL—MOLECULAR BIOLOGY/VIROLOGY position available immediately to study retroviral gene expression in murine cell lines, embryos, and hemopoietic stem cells. Research involves the construction of recombinant DNA vectors, the study of cell specificity of enhancer/promoter sequences, and genomic cloning. Previous training in molecular biology and/or embryological procedures is necessary. Please submit curriculum vitae, a statement of research goals, three letters of reference, and recent reprints to: **R. J. Eckner, Ph.D., Director of Research, MBVL, Department of Radiation Oncology, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605. An Affirmative Action/Equal Opportunity Employer.**

Postdoctoral Associate

To investigate the regulation and overproduction of an enzyme used to neutralize heparin in blood through the cloning of DNA from *Flavobacteria*. Position offers an opportunity to work closely with a biochemical engineering group and learn fermentation technology. Requires Ph.D. in Molecular Biology and experience in cloning and gene expression in Gram (-) and/or Gram (+) bacteria.

Send 2 copies of resume to: Dr. Charles L. Cooney, MIT Department of Nutrition and Food Science, 77 Massachusetts Avenue, 66-468, Cambridge, MA 02139. MIT is an equal opportunity/affirmative action employer.

POSTDOCTORAL POSITION IN IMMUNOLOGY available immediately to study interaction of auto-antigen-specific T cell lines with peptides derived from the autoantigen. Applicants should have experience in cellular immunology. Send curriculum vitae and the names of a minimum of three references to: **Dale Gregerson, Department of Ophthalmology, Box 493 Mayo, University of Minnesota, 516 Delaware Street, S.E., Minneapolis, Minn. 55455.**

POSTDOCTORAL POSITION—Strong biochemical background in protein purification. Experience in hormone-binding protein interactions and development of monoclonal antibodies is desirable. Available immediately. Send curriculum vitae and three letters of recommendation to:

**C. Sonnenschein, M.D.
Tufts University School of Medicine
Boston, Mass. 02111**

POSTDOCTORAL POSITION for NIH-funded study of cell coupling in the organ of Corti. Experience in intracellular recording, peripheral auditory physiology, or cell coupling desirable. Salary: \$16,000 per annum. Send curriculum vitae and names and addresses of three references to: **J. Santos-Sacchi, Ph.D., Section of Otolaryngology, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY-NEW JERSEY MEDICAL SCHOOL, 100 Bergen Street, Newark, N.J. 07103.**

POSTDOCTORAL POSITION available immediately. Two-year appointment to study dDNA damage in the presence of melanin. Experience in photobiology and/or photochemistry desirable. Send résumé and names of three references to: **Helene Z. Hill, Ph.D., Section of Cancer Biology, MSB-1577, University of Medicine and Dentistry of New Jersey-New Jersey Medical School, Newark, N.J. 07103. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION

M.D. or Ph.D. neurobiologists interested in sensory nerve regeneration and neurophysiology of pain pathways with focus on mammalian cornea and trigeminal system. One position for individual in the physiology of the free-nerve ending and basis of sensory transduction. Other position for person in nerve regeneration and nerve substrate interactions. Background in electron microscopy, neuroanatomical techniques, and neurophysiology. Positions available for 3 years and may begin now. Salary commensurate with credentials. Send curriculum vitae and three references to: **R. W. Beuerman, Louisiana State University (LSU) Eye Center, 136 South Roman Street, New Orleans, La. 70112. An Equal Opportunity/Affirmative Action Employer**

POSITIONS OPEN

POSTDOCTORAL POSITION available to study the regulation of extracellular matrix formation in a department with major emphasis on connective tissue biochemistry. Molecular biology techniques will be used in studies involving cell-free translation and molecular cloning of nucleic acids encoding collagen and proteoglycan. Applicant should have interest and experience in connective tissue biochemistry or molecular biology. Send résumé and names of references to: **Dr. Linda Sandell, Department of Biochemistry, Rush-Presbyterian-St. Luke's Medical Center, 1753 West Congress Parkway, Chicago, Ill. 60612. Equal Opportunity Employer, M/F.**

POSTDOCTORAL POSITION available immediately in research group studying multistage mechanisms of chemical carcinogenesis. Emphasis on immunological changes at cell and tissue levels occurring in the process of cancer induction. Background in immunology preferred, experience in immunohistology desired. Send résumé and names of three references to: **Dr. C. Stuart Baxter, Department of Environmental Health, University of Cincinnati Medical Center, 3223 Eden Avenue, Mail Location No. 56, Cincinnati, Ohio 45267. The University of Cincinnati is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately for recent Ph.D. for study of nucleic acid abnormalities in autoimmune disease using recombinant DNA techniques. Background in biochemistry and/or immunology desirable. Please submit statement of research interests and curriculum vitae to: **Dr. Charles Steinman, Director, Division of Rheumatology, State University of New York-Downstate Medical Center, 450 Clarkson Avenue, Box 42, Brooklyn, N.Y. 11203. Equal Opportunity/Affirmative Action Employer, M/F.**

POSTDOCTORAL POSITION IN SMOOTH MUSCLE PROGRAM TO STUDY THE INFLAMED BOWEL

A 3-year postdoctoral position is offered to study the mechanisms underlying altered smooth muscle contractility in an animal model of the inflamed bowel. Project involves measurement of motility in vivo as well as contractile studies in vitro. All aspects of excitation-contraction coupling will be examined, including radioligand binding of agonists, calcium handling studies as well as morphological studies. The work will take place in a well-equipped laboratory devoted exclusively to the study of smooth muscle, under the directorship of Professor E. E. Daniel. Qualified candidate will have knowledge of, and experience in, the physiology and pharmacology relevant to control of smooth muscle function and knowledge of, or interest in, the nature and effects of inflammatory processes. The project is part of the activity of the Intestinal Disease Research Unit sponsored by the Canadian Foundation for Ileitis and Colitis. Salary will be consistent with MRC guide lines. Applications, together with curriculum vitae, should be forwarded to: **Dr. S. M. Collins, Room 4W8, McMaster University Medical Centre, 1200 Main Street West, Hamilton, Ontario, Canada L8N 3Z5.**

POSTDOCTORAL/RESEARCH ASSOCIATE Combined Los Alamos-University of New Mexico research position. Investigations of the maturation sequence of mouse and human monomyelocytic cell lineage cells. Work involves cell culture, monoclonal antibody production, flow cytometry and cell sorting, cellular immunology, and possibly involvement in molecular biology (oncogene expression) on normal and tumor cells. Contact: **T. B. Tomasi, M.D., Ph.D., University of New Mexico Cancer Center, Albuquerque, N.M. 87131, or Carleton Stewart, Ph.D., Group LS-4, MS M888, Los Alamos National Laboratory, Los Alamos, N.M. 87545.**

POSTDOCTORAL SCIENTIST

The pulmonary research group of St. Luke's-Roosevelt Hospital-Columbia University College of Physicians and Surgeons is seeking a postdoctoral research associate with an interest in cell biology to participate in ongoing investigations of response of lung cells to injury. Training and experience in cell and tissue culture, electron microscopy, and protein chemistry would be helpful. Candidate with successful extramural support experience will be given preference. Communication skill essential. Send curriculum vitae to: **Dr. Stephen F. Ryan, Director, Anatomic Pathology, Department of Pathology, St. Luke's-Roosevelt Hospital, 113th and Amsterdam Avenue, New York, N.Y. 10025.**

POSITIONS OPEN

A **POSTDOCTORAL POSITION** is available to work on the mechanism of enzyme action. Experience with enzyme assays and kinetics is required. Some experience in organic synthesis is desirable. Qualified individuals should send curriculum vitae and the names of three references to:

**Dr. Paul F. Cook
Department of Biochemistry
North Texas State University
Texas College of Osteopathic Medicine
Denton, Texas 76203**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL RESEARCH ASSOCIATE AND RESEARCH ASSISTANT POSITIONS are open for work on the genetics of degradation of hydrocarbons and chlorinated compounds. Many of these degradative gene clusters have been cloned in short segments and we need Ph.D. and M.S. candidates with experience in cloning and sequencing of genes as well as in molecular biological techniques such as *lac* fusion strain construction, foot printing, S1 nuclease mapping, and so forth, for characterization of the genes with their promoters and various regulatory sequences as well as the control of expression. Please send curriculum vitae with names of references to: **Kenneth E. Johnson, University of Illinois at Chicago, Department of Microbiology and Immunology, E703 MSA, 835 South Wolcott, Chicago, Ill. 60612. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.**

PROVOST: The Massachusetts General Hospital Institute of Health Professions—To serve as chief administrative officer of a multidisciplinary, degree-granting, academic unit within a major teaching hospital. Division programs currently or soon will include: Master's degrees in dietetics, nursing, physical therapy, and speech-language pathology, and a graduate certificate program in social work. Applicants should hold an earned doctorate, have experience in educational administration, be strongly committed to interdisciplinary education, and be able to provide creative leadership in further development of academic programs. Experience in health care and in education of health professionals strongly preferred. Immediate opening: review of applications will begin 1 August 1984. Inquiries, nominations, and applications with current résumé and names of three professional references should be sent to: **Henry J. Mankin, M.D., Chairperson, Provost Search Committee, Massachusetts General Hospital, Boston, Mass. 02114.**

Affirmative Action/Equal Opportunity Employer

RESEARCH ASSOCIATE

Ph.D. (physiology/pharmacology), M.D., or equivalent with training in skeletal muscle physiology and biochemistry to work on research related to malignant hyperthermia. Prefer candidate with whole animal experience. Postdoctoral position available immediately. Salary range \$16,000 to \$19,000 depending on training and experience.

Send curriculum vitae and two letters of reference to:

**Personnel/Manpower
Sheila M. Muldoon, M.D.
Department of Anesthesiology/Physiology
Uniformed Services University
of the Health Sciences
4301 Jones Bridge Road
Bethesda, Md. 20814-4799**

An Equal Opportunity/Affirmative Action Employer

CALIFORNIA BIOTECHNOLOGY, INC., has an immediate opening for a **RESEARCH ASSOCIATE** (B.A. or M.S.) in its oligonucleotide synthesis facility. Duties include automated DNA synthesis, characterization of purified products, and construction and analysis of synthetic genes. Cloning and DNA sequencing experience desired. Send résumé and names of three professional references to: **Olgo Facility Director, California Biotechnology, Inc., 2450 Bayshore Frontage Road, Mountain View, Calif. 94043.**

RESEARCH ASSOCIATE AND RESEARCH FELLOWSHIP POSITIONS available with research group working on mechanism of action of growth factors, particularly transforming growth factors and the association of oncogene products with growth factor action. Experience with recombinant DNA or protein chemistry techniques is important. Address inquiries to: **Harold L. Moses, M.D., Chairman, Department of Cell Biology, Mayo Clinic/Foundation, Rochester, Minnesota 55905. An Equal Opportunity/Affirmative Action Institution.**

NATIONAL CANCER INSTITUTE
DIVISION OF CANCER TREATMENT
BIOLOGICAL RESPONSE MODIFIERS PROGRAM

Associate Director Biological Response Modifiers Program

Salary Range—\$58,938 to \$66,400 (Physicians may be eligible for a Physicians' Comparability Allowance up to \$10,000 per year)

Has overall responsibility for the planning, direction, evaluation and coordination of basic and applied research on interferons and other biological response modifiers. The incumbent establishes program priorities, allocates resources, and evaluates program effectiveness. Administers a \$20 million contract and grant program and a staff of approximately 103 scientific and support personnel.

Position information and qualifications requirements may be obtained by contacting:

Cynthia A. Kauff, PMS
National Cancer Institute
Bldg. 31, Room 3A08
Bethesda, Maryland 20205
Tel. (301) 496-6503

Applications (SF-171, C.V. and Bibliography) must be submitted to the above address and postmarked not later than September 30, 1984.

AN EQUAL OPPORTUNITY EMPLOYER

PATHOLOGIST

Sterling-Winthrop Research Institute, the research center of Sterling Drug, a Fortune 300 pharmaceutical company, announces an opening for a pathologist in its Toxicology department. The position will involve the conducting of growth and microscopic (light and ultrastructural) pathology.

The successful candidate will have a DVM and/or PhD with board eligibility in pathology. Experience in electron microscopy and ultrastructural pathology is important. 1-5 years industrial experience is desirable.

We provide an excellent opportunity for professional development by active participation in project and protocol design and report preparations for IND and NDA requirements in accordance with good laboratory practice.

We offer an attractive salary and benefit package which includes a program to aid in board certification. The Institute is located near Albany, New York which is the center of major summer and winter recreational activities. Please send your curriculum vitae including salary history in confidence to:

Mr. John G. Barry
Employee Relations Administrator

STERLING-WINTHROP RESEARCH INSTITUTE

A Division of Sterling Drug Inc.
Columbia Turnpike
Rensselaer, NY 12114

Equal Opportunity Employer M/F/H



Vice President/Director: Toxicology and Pathology

The Syntex Corporation, a diversified international health care company, seeks a Director of Toxicology and Pathology who will play a critical role in developing our next generation of health care products.

You will work with groups of multi-disciplined scientists in designing and implementing all toxicology and pathology programs. This includes ensuring programs meet domestic and foreign regulatory agency requirements. You will also serve as the primary corporate liaison to these agencies in related matters.

Requirements for this highly responsible position include a Ph.D. in Toxicology (or related field) and at least 10 years of experience in toxicology preferably in the pharmaceutical industry. Highly developed leadership, managerial and administrative skills are essential.

Send your resume immediately to: Syntex Corporation, Professional Employment, Dept. LK, 3401 Hillview Avenue, Palo Alto, CA 94304. We are an equal opportunity employer.



SYNTEX

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 - ☐ \$56 USA ☐ \$80 Canada ☐ \$83 Foreign
 - ☐ \$121 air-surface delivery via Holland

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 - ☐ \$93 USA ☐ \$117 Canada ☐ \$120 Foreign
 - ☐ \$158 air-surface delivery via Holland

- ☐ Payment enclosed ☐ Bill me later

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ATTACH
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RESEARCH ASSOCIATE

East-West Center

The East-West Center is an educational institution established in Hawaii by the United States Congress in 1960 "to promote better relations between the United States and the nations of Asia and the Pacific through cooperative study, training and research."

Applications and nominations for an academic staff position in the Environment and Policy Institute are being accepted. The Research Associate position is full-time and is a limited appointment up to three years with the possibility of renewal. All Center programs are multinational and multidisciplinary. Research Associates, along with visiting scholars, professionals, and graduate degree students form teams which work on problems with significant mutual consequences for the United Nations and nations of Asia and the Pacific. The successful candidate will work on Institute programs dealing with Forest Lands Policy, Natural Systems Assessment, Human Ecology, Agricultural Systems, and Water Resources.

Candidates must have either 1) a Ph.D. in natural science, social science or professional discipline relevant to forest land use and at least five (5) years of appropriate professional or research experience, or 2) a M.S. or M.F. degree and at least ten (10) years of relevant professional or research experience. Experience in the Asia/Pacific region is preferred, and at least some of it must have been in developing countries. Working proficiency in the English language is required.

Cover letter should give examples of experience demonstrating ability to: a) discover new knowledge about natural resource and environmental issues, especially at the international level; b) develop applications of this knowledge, for example, curricula, educational materials, policy aids; c) design and implement research and education projects and activities in a team multinational context; and d) obtain funding and manage a substantial research package.

Salary for academic staff members commensurate with extent of experience and qualifications plus cost-of-living allowance currently at 22.5% (subject to change). All nominees will be contacted to determine interest. Applications with cover letter, complete curriculum vitae, and names and addresses of three professional references **must be postmarked by December 1, 1984. Send to Karen Lam, Personnel Office, Dept. 19, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96848.**

*An Equal Employment Opportunity/
Affirmative Action Employer*

RESEARCH ASSOCIATE

East-West Center

The East-West Center is an educational institution established in Hawaii by the United States Congress in 1960 "to promote better relations between the United States and the nations of Asia and the Pacific through cooperative study, training and research." Each year scholars, government and business leaders and graduate students from the Asia/Pacific region join the Center's international staff in studying critical problems in the region in such areas as population, resources, environment, culture and communication. The Center seeks excellence in research and education, policy analysis and practical applications of research.

The Resource Systems Institute is seeking an academic staff member with senior level experience in mineral and energy resource assessments and national planning and policy formulation in both developed and developing nations. The successful applicant will lead the resource assessment project and will have responsibilities to raise research funds, design resource assessment programs for application in developing country settings, interact with senior government policy makers with respect to the use of resource assessment information in development planning, and be involved in education and training activities.

Required Qualifications: A Ph.D. or equivalent in geology or mineral resources plus at least 12 years full-time relevant research or professional experience beyond the Ph.D. Of the 12 years, six years must be in a senior level position that includes management responsibilities, resource assessment research, design of resource information systems, and minerals and energy policy analysis. Experience should include active work in both developed and developing countries including at least one Asian/Pacific developing country. The applicant must have a strong publications record of articles in the field of resource assessments and minerals policy in recognized high quality professional journals.

This is a 3-year limited appointment with a possibility of extension. The salary range is from \$42,928 to \$47,221 per year plus a cost-of-living allowance currently at 22.5% (subject to change). Starting date preferably by December 1, 1984.

Submit resume with a cover letter detailing the relevance of your qualifications and background to the position and names and addresses of three professional references. The cover letter must provide examples of significant accomplishments with respect to each of the following: 1) minerals and energy resource assessment, 2) minerals and energy policy and development, 3) management of international/national resource programs, 4) education and training, and 5) evidence of ability to cooperate in the development and implementation of both education and research programs. **Applications must be postmarked by October 8, 1984. Send to: Karen Lam, Personnel Office, Dept. 19, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96848.**

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The Regional Research Laboratory offers opportunities worthy of your talents for two biochemists/immunologists with training in the areas of receptors and membrane biochemistry. Areas of interest should include:

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- Receptor desensitization, and
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RESEARCH ASSOCIATE 1-B/H

The Department of Otolaryngology at the Ohio State University is searching for an individual to join an established research team. A Master's degree in microbiology/immunology or equivalent combination of education and experience is required. Experience in ELISA, monoclonal antibody production, and routine immunochemistry and clinical microbiology is preferred.

An excellent wage and benefits package is offered. Qualified individuals should send a résumé and references to: **THE OHIO STATE UNIVERSITY HOSPITALS, Office of Human Resources, Lobby, Means Hall, 1654 Upham Drive, Columbus, Ohio 43210; telephone: 614-421-4995. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSISTANT PROFESSOR—Grant-funded positions available immediately for 2½ to 3 years for Ph.D. with postdoctoral research experience in mammalian cell culture, DNA damage and repair assays, and molecular and cellular radiation biology. Successful candidates will carry grant research on the relationship of DNA lesions to potentially lethal damage and prepare own grant proposals for future support. Send curriculum vitae and names of references to: **Professor C. S. Lang, Radiation Oncology Department, State University of New York—Downstate Medical Center, Box 1211, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. An Affirmative Action/Equal Opportunity Employer.**

SCIENCE EDITOR to edit biology monographs, educational booklets, and audiovisual scripts. Must have masters or doctorate degree in biology and have strong verbal, editorial, and organizational skills. Excellent working conditions and benefits. Mail résumé and transcripts to: **Personnel Director, Carolina Biological Supply Company, 2700 York Road, Burlington, North Carolina 27215. An Equal Opportunity Employer.**

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RESEARCH: PROJECT ASSOCIATE. Full-time (40 hours minimum per week) to design and develop immunochemical methods for the detection of several selected mycotoxins in foods, feeds, and biological fluids and develop a prophylactic method against mycotoxicoses. Job requires a Ph.D. in biochemistry, experience in microbial chemistry and toxicology, and several years of experience in biotransformation of toxins. Extensive publications desirable. Job includes working with and guiding graduate and undergraduate student research in isolation, characterization, and analysis of toxins. Full-time salary \$19,980 per year, starting as soon as possible. Qualified candidates should contact: **Eileen Breitweiser, Wisconsin Job Service, 206 North Broom Street, Madison, Wis. 53703. An Equal Opportunity Employer.** This ad is not paid for by Job Service funds.

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Connecticut State Job Service
100 Arch Street
New Britain, Conn. 06051
Job Order Number 0357979

SENIOR RESEARCH SCIENTIST

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Cray Research has an immediate opening for a senior research scientist in the software research product development group, Chippewa Falls, Wisconsin. Candidates with experience in compiler design and optimizations for scientific and engineering FORTRAN codes are desired. The position involves the recruiting and guidance of support staff, experiments in automatic vectorization, data flow analysis, multi-tasking, parallel processing, and more generally, the production of near optimal codes for computer architectures.

If you would like to join a small research group pursuing the development of a new generation of super computers and would enjoy the family environment of a small community in northern Wisconsin, please send your résumé to: **George Spix, CRAY RESEARCH, INC., MS115, 900 Lowater Road, Chippewa Falls, Wis. An Equal Opportunity Employer, M/F/V/H.**

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SOLID STATE PHYSICS—A position exists for a Ph.D. physicist in ion beam/solid interactions. Duties will include development of ion-beam analysis methods and MeV ion-implantation techniques. Two years of experience beyond Ph.D. Salary \$32,115.00 per year.

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Ohio Bureau of Employment Services
222 Salem Avenue, P.O. Box 1822
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Reporting to the Manager, Biological Research the Scientist performs all research on the growth and maintenance of cells in culture. The Scientist is responsible for research and technical investigations of various tissue culture parameters of both existing and new products under development by R&D Engineers. Designs and implements experimental research for the investigation of original biological technologies.

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POSITIONS OPEN

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RESEARCH ENGINEER/SCIENTISTS (ACOUSTICS AND VIBRATION)

The National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control, is seeking a **CHIEF FOR THE BIOACOUSTICS AND OCCUPATIONAL VIBRATION SECTION**, Physical Agents Effects Branch, Division of Biomedical and Behavioral Science, in Cincinnati, Ohio. The successful candidate will participate in NIOSH's principal research program addressing the health and safety consequences of occupational exposure to noise and vibration, and will supervise a group of professionals in that area.

The candidate should be an engineer or scientist with experience in vibration, noise, acoustics, and human physiology, with a commensurate record of scientific accomplishment. The candidate should also have experience in the development and direction of research programs.

The position is in the Public Health Service Commissioned Corps or the Career Civil Service, GS-13/14. Salary range: \$36,327 to \$55,807, depending on qualifications and experience.

Interested candidates should send their curriculum vitae or Federal Standard Form 171 to: **Dr. James M. Smith, Chief, Physical Agents Effects Branch, NIOSH (C-27), 4676 Columbia Parkway, Cincinnati, Ohio 45226.**

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MISSOURI—SENIOR RESEARCHER

A new full-time tenure-track position for a senior dental researcher at the associate professor or full professor level is available beginning January 1985. Successful candidate will be expected to build a major research laboratory, and in special cases, may bring research associate(s) with her/him. Applicants should possess a D.D.S. and Ph.D. in a basic science and a demonstrated record of successful grantsmanship, research, and publications. Funds are available for continuous support of E & E and for special research projects. Some graduate level instruction is expected. Salary is competitive and negotiable. *Equal Opportunity/Affirmative Action Employer.* Interested researchers are invited to send curriculum vitae with outline of research and grants experience, along with names of three references no later than 1 December 1984 to: **Dr. Jack L. Stewart, Associate Dean, School of Dentistry, University of Missouri-Kansas City, 650 East 25th Street, Kansas City, Missouri 64108.**

TRANSPLANTATION IMMUNOLOGIST

Tenure-track faculty position for transplantation immunologist in the Department of Surgery, with a joint appointment in the Department of Microbiology and Immunology. This person will direct a human tissue typing laboratory staffed by five technicians, and 75 percent effort may be devoted to independent research in transplantation immunology, teaching, and graduate student training program in the Department of Microbiology and Immunology. Candidates should have a Ph.D. or M.D. (or equivalent), postdoctoral research experience in transplantation immunology, and a commitment to developing a research program. Research laboratory and support facilities including a cell sorter are provided. Applicants should submit curriculum vitae, the names of three references, and a summary of research interests to:

John C. McDonald, M.D.
Professor and Chairman
Department of Surgery
and

Dennis J. O'Callaghan, Ph.D.
Professor and Chairman
Department of Microbiology and Immunology
Louisiana State University Medical Center
1501 Kings Highway
Shreveport, Louisiana 71130
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POSITIONS OPEN

SPECIALIST I—Applications are solicited for a Specialist I position requiring extensive and intimate knowledge of operational theory, application, and maintenance of artificial pancreas (Glucose Controlled Insulin Infusion Systems, Miles Laboratory, Inc.), indirect calorimetry (Metabolic Measurement cart, Sormedics, Anaheim, California, and blood flow measuring instruments. The applicant should have at least 4 to 5 years of both a practical and theoretical familiarity with hormone-fuel metabolism in normal, diabetic (type I and type II), and traumatized patients, and should have at least completed the course requirements leading to a master's degree in biology. Position open until filled; applications must be received by 15 November 1984. A letter outlining research, teaching background and interests, administrative experience, curriculum vitae, and the names of five references must be received by 15 November 1984. Reply to: **Thomas T. Aoki, M.D., Chair of Search Committee for Specialist I, Division of Endocrinology, University of California, Davis, School of Medicine, 4301 X Street, Sacramento, Calif. 95817.** *The University of California is an Affirmative Action/Equal Opportunity Employer.*

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POSTDOCTORAL FELLOWSHIP in retinal physiology to use patch clamp techniques to record from identified bipolar and ganglion cells in culture. Available 1 March 1985 for 3 years at \$19,300 per annum plus health insurance. Send curriculum vitae and two letters of reference to: **G. L. Fain, Department of Ophthalmology, JSEI, University of California, Los Angeles, School of Medicine, Los Angeles, Calif. 90024.**

THE HEBREW UNIVERSITY OF JERUSALEM Jerusalem, Israel

The Hebrew University of Jerusalem offers a small number of postdoctoral fellowships for the 1985-1986 academic year in the humanities, social sciences, natural sciences, agriculture, and medicine.

Candidates may apply at an early stage of their professional career (not later than 3 years after completion of their doctoral dissertation) to: **P.O. Box 1255, Jerusalem 91904, Israel.**

Completed application forms must be returned by 1 December 1984.

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HEREDITARY DISEASE FOUNDATION
606 Wilshire Boulevard, Suite 504
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TRAINING GRANT

NIH TRAINING GRANT POSITIONS are now available for postdoctoral studies in the molecular biology of peptide growth factors. Applicants should possess a keen interest in eukaryotic gene regulation and have demonstrated expertise in recombinant DNA methodology. United States citizenship required. Graduate studies are also available for outstanding predoctoral candidates. Please send curriculum vitae and two letters of recommendation to: **Dr. Michael J. Getz, Department of Cell Biology, Mayo Clinic, Rochester, Minn. 55905.** *An Affirmative Action/Equal Opportunity Institution.*

TRAINEESHIPS

TRAINEESHIPS

POSTDOCTORAL FELLOWSHIPS IN MOLECULAR ASPECTS OF GENETICS AND DISEASE. Positions available at Roswell Park Memorial Institute, a comprehensive cancer research institute and hospital, in the following laboratories: V. Chapman (X-chromosome inactivation); R. Elliott (analysis of DNA polymorphisms); K. Gross (control of gene expression); W. Held (genetic and hormonal control of gene expression); C. Helmstetter (DNA replication); A. Kinniburgh (molecular analysis of hereditary disease); L. Maquat (gene regulation and hereditary disease); T. Shows (human genetics and molecular disease); R. Swank (inherited disorders of lysosome biogenesis). These investigators represent four research departments: Cell and tumor biology, experimental biology, molecular biology, and human genetics. Stipends follow NIH guidelines. Please send résumé and names of three references to: **Dr. T. Shows, Roswell Park Memorial Institute, 666 Elm Street, Buffalo, N.Y. 14263.**

GRADUATE STUDY

DOCTORAL PROGRAM IN MOLECULAR AND CELLULAR BIOLOGY AND PATHOBIOLOGY. Interdisciplinary program leading to Ph.D. degree seeks qualified candidates interested in fundamental molecular and cellular biology and its application to disease states in man. Stipends are available on a competitive basis. Contact: **Director, MCBP Program, College of Graduate Studies, Medical University of South Carolina, Charleston, South Carolina 29425.**

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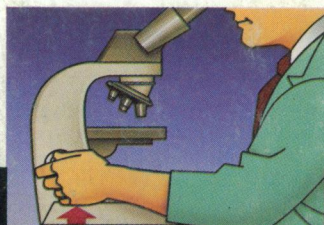
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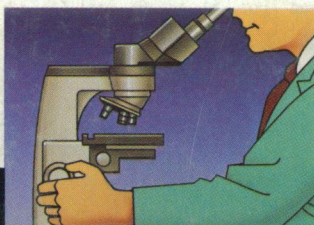
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