

berg's explanation of the elusive connection between satellite orbital evolution and thermal history. Sill and Clark compile laboratory data and employ them to interpret surface compositions of the satellites. Chapters on Amalthea, the outer Jovian satellites, and the rings of Jupiter are fine summaries of topics too often neglected. The book ends with a series of maps, a glossary, lengthy acknowledgments, and an index.

Graduate students and researchers in planetary science, geology, astronomy, and physics are most likely to benefit from *Satellites of Jupiter*. Most of the 24 papers in the book originated at an International Astronomical Union conference held just ten months after Voyager 2 passed Jupiter. The papers were revised and refereed following the meeting; the final submissions came in from July 1980 to October 1981, and hence some authors digested Voyager data for twice as long as others. The book is not the usual compilation of tried and true reviews. Prepared only a dozen or so months after the most startling observations of Jupiter were made, many chapters contain primary source material from the Voyager mission as well as attempts at synthesis. Interestingly, in view of the meeting's international sponsorship, 46 of the 47 collaborating authors are American or are based in the United States, no doubt reflecting that only U.S. spacecraft have flown into the outer reaches of space. Also, many authors are remarkably youthful for such an important book. Given recent NASA funding for planetary exploration, future volumes are likely to be the work of foreign or elderly authors.

*Satellites of Jupiter* deviates little from the unusually high standards set by the Arizona Space Science series. Morrison has chosen papers that are in depth, well balanced in outlook, and written by the appropriate experts and has placed the papers in context with an enlightening 40-page introductory chapter, which can be profitably read in conjunction with the final chapter, by Pollack and Fanale, who apply our knowledge of the Jovian system to constrain scenarios for the system's origin. Eight pages of color plates have been included, which in part accounts for a price higher than that of most other volumes in the series. Figure reproduction—critical for a book emphasizing geology—is somewhat uneven, with figures in chapter 9 and the appendix being below par, though the rest are quite good. A few typos are present, with incorrect names a minor annoyance.

The satellites of Jupiter have chal-

lenged our view of our cosmos ever since the first four were spied by Galileo and Marius in 1610. At that time, their discovery in orbit about a body other than Earth indicated a serious failing in the generally accepted geocentric model of the universe. As the present book well demonstrates, our modern investigation of the Jovian system may ultimately overturn many prevailing tenets concerning the operation of the solar system. It will do this by forcing us to extend ideas into new realms—volcanologists now have a whole new system to consider, geologists have to appreciate non-silicate surfaces, students of tectonics have complex puzzles to unravel, ring enthusiasts have a different form to investigate, and cosmologists at last have another example of a "planetary" system, albeit a miniature one, to contemplate. The current watchword of planetary science—that much is to be gained from comparative studies of objects and processes—is surely receiving its severest test from the diverse array of objects that surround the solar system's largest planet.

JOSEPH A. BURNS

*Department of Theoretical and Applied Mechanics, Cornell University, Ithaca, New York 14853*

## Books Received

**Ab Initio Calculation of Phonon Spectra.** Proceedings of a workshop, Antwerpen, Belgium, June 1981. J. T. Devreese, V. E. Van Doren, and P. E. Van Camp, Eds. Plenum, New York, 1983. viii, 304 pp., illus. \$42.50.

**Compendium of Turfgrass Diseases.** Richard W. Smiley. American Phytopathological Society, St. Paul, Minn., 1983. viii, 102 pp., illus. Paper, \$15. The Disease Compendia Series.

**Comprehensive Treatise of Electrochemistry.** Vol. 6, Electrodes: Transport. Ernest Yeager, J. O'M. Bockris, Brian E. Conway, and S. Sarangapani, Eds. Plenum, New York, 1983. xxiv, 522 pp., illus. \$67.50.

**Computer Applications in Petroleum Geology.** Joseph E. Robinson. Hutchinson Ross, Stroudsburg, Pa., 1982 (distributor, Van Nostrand Reinhold, New York). xii, 164 pp., illus. Cloth, \$26.95; paper, \$16.95. Computer Methods in the Geosciences, 1.

**Concepts of Genetics.** William S. Klug and Michael R. Cummings. Merrill, Columbus, Ohio, 1983. xvi, 614 pp., illus. \$28.95.

**Copper, Molybdenum, and Vanadium in Biological Systems.** B. A. Averill and eight others. Springer-Verlag, New York, 1983. vi, 166 pp., illus. \$37. Structure and Bonding, 53.

**Crop Reactions to Water and Temperature Stresses in Humid, Temperate Climates.** Proceedings of a workshop, Durham, N.C., Oct. 1980. C. David Raper, Jr., and Paul J. Kramer, Eds. Westview, Boulder, Colo., 1983. x, 374 pp., illus. \$30. Westview Special Studies in Agriculture/Aquaculture Science and Policy.

**Cryptorchidism and Related Anomalies.** Fray F. Marshall and Jack S. Elder. Praeger, New York, 1982. x, 120 pp., illus. \$24.95.

**Crystallographic Statistics.** Progress and Problems. Papers from a symposium, Aug. 1981. S. Ramaseshan, M. F. Richardson, and A. J. C. Wilson, Eds. Indian Academy of Sciences, Bangalore, 1982. vi, 314 pp., illus. \$18; to individuals, \$9.

**Daytime Star.** The Story of Our Sun. Simon Mitton. Scribner, New York, 1983. xvi, 192 pp., illus. Paper, \$6.95. Reprint of the 1981 edition.

**Developmental Biology of Freshwater Invertebrates.** Frederick W. Harrison and Ronald R. Cow-

den, Eds. Liss, New York, 1982. xx, 588 pp., illus. \$72.

**Diagenesis in Sediments and Sedimentary Rocks, 2.** Gunnar Larsen and George V. Chilingar, Eds. Elsevier, New York, 1983. viii, 572 pp., illus. \$117. Developments in Sedimentology 25B. Revision of *Diagenesis in Sediments* (1967).

**Diradicals.** Weston Thatcher Borden, Ed. Wiley-Interscience, New York, 1983. xiv, 344 pp., illus. \$40.

**Discovering DNA.** Meditations on Genetics and a History of the Science. N. A. Tiley. Van Nostrand Reinhold, New York, 1983. xxvi, 288 pp., illus. \$16.95.

**Disinfection of Sewage Sludge.** Technical, Economic and Microbiological Aspects. Proceedings of a workshop, Zürich, May 1982. A. M. Bruce, A. H. Havelaar, and P. L'Hermitte, Eds. Reidel, Boston, 1983 (distributor, Kluwer Boston, Hingham, Mass.). viii, 252 pp., illus. \$34.95.

**Dispersal and Migration.** William Z. Lidicker, Jr., and Roy L. Caldwell, Eds. Hutchinson Ross, Stroudsburg, Pa., 1982 (distributor, Van Nostrand Reinhold, New York). xvi, 312 pp., illus. \$39.50.

**Dolomitization.** Donald H. Zenger and S. J. Mazzullo, Eds. Hutchinson Ross, Stroudsburg, Pa., 1982 (distributor, Van Nostrand Reinhold, New York). xvi, 432 pp., illus. \$54. Benchmark Papers in Geology, vol. 65.

**Handbook of Community Gardening.** By Boston Urban Gardeners. Susan Naimark, Ed. Scribner, New York, 1983. xii, 180 pp., illus. Paper, \$7.95.

**Handbook of Integral Transforms of Higher Transcendental Functions.** Theory and Algorithmic Tables. O. I. Marichev. Translated from the Russian edition (Minsk, 1978) by L. W. Longdon. Horwood, Chichester, England, and Halsted (Wiley), New York, 1983. 336 pp., illus. \$79.95. Ellis Horwood Series in Mathematics and Its Applications.

**Handbook of Psychopharmacology.** Vol. 16, Neuropeptides. Leslie L. Iversen, Susan D. Iversen, and Solomon H. Snyder, Eds. Plenum, New York, 1983. xvi, 578 pp., illus. \$65.

**Handbook of Space Astronomy and Astrophysics.** Martin V. Zombeck. Cambridge University Press, New York, 1983. viii, 326 pp., illus. \$24.95.

**High Temperature Alloys for Gas Turbines 1982.** Proceedings of a conference, Liège, Oct. 1982. R. Brunetaud and five others, Eds. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 1080 pp., illus. \$120.

**Indicators of Genotoxic Exposure.** Papers from a conference, Cold Spring Harbor, N.Y., Apr. 1982. Bryn A. Bridges, Byron E. Butterworth, and I. Bernard Weinstein, Eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y., 1982. xiv, 580 pp., illus. \$62.50. Banbury Report 13.

**Induced Mutagenesis.** Molecular Mechanisms and Their Implications for Environmental Protection. Proceedings of a conference, Rochester, N.Y., June 1981. Christopher W. Lawrence, Ed. Plenum, New York, 1983. x, 434 pp., illus. \$55. Basic Life Sciences, vol. 23.

**Infanticide and the Handicapped Newborn.** Dennis J. Horan and Melinda Delahoyde, Eds. Brigham Young University Press, Provo, Utah, 1982. xvi, 128 pp., Paper, \$9.95.

**The Influence of Sewage Sludge Application on Physical and Biological Properties of Soils.** Proceedings of a seminar, Munich, June 1981. G. Catroux, P. L'Hermitte, and E. Suess, Eds. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). viii, 254 pp., illus. \$34.95.

**Inhibition of Folate Metabolism in Chemotherapy.** The Origins and Uses of Co-trimoxazole. G. H. Hitchings, Eds. Springer-Verlag, New York, 1983. xxii, 458 pp., illus. \$120. Handbook of Experimental Pharmacology, vol. 64.

**Inquest on the Shroud of Turin.** Joe Nickell. Prometheus Books, Buffalo, N.Y., 1983. 178 pp., illus. \$14.95.

**Inside the Black Box.** Technology and Economics. Nathan Rosenberg. Cambridge University Press, New York, 1983. xii, 304 pp. Cloth, \$29.95; paper, \$12.95.

**Instabilities, Bifurcations, and Fluctuations in Chemical Systems.** Papers from a workshop, Austin, Tex., Mar. 1980. L. E. Reichl and W. C. Schieve, Eds. University of Texas Press, Austin, 1982. xii, 428 pp., illus. \$35.

**International Advances in Nondestructive Testing.** Vol. 9. Warren J. McGonagale, Ed. Gordon and Breach, New York, 1983. viii, 364 pp., illus. \$79.

**International Directory of New and Renewable Energy Information Sources and Research Centres.** Unesco, Paris, and SERI, Golden, Colo., 1982 (distributor, American Solar Energy Society, New York). xvi, 470 pp. Paper, \$35. Progress in Solar Energy Supplement.

**Probability, Statistical Optics, and Data Testing.** A Problem Solving Approach. B. Roy Frieden. Springer-Verlag, New York, 1983. xviii, 404 pp., illus. \$39. Springer Series in Information Sciences, vol. 10.

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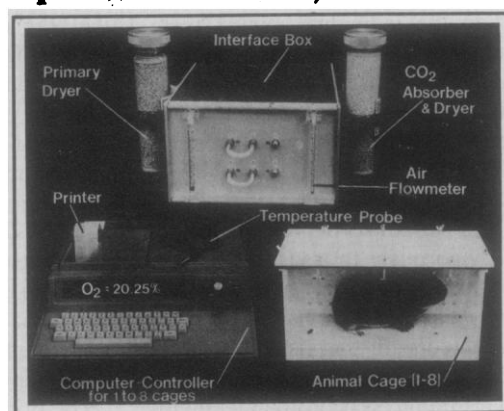
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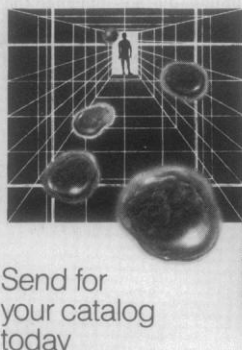
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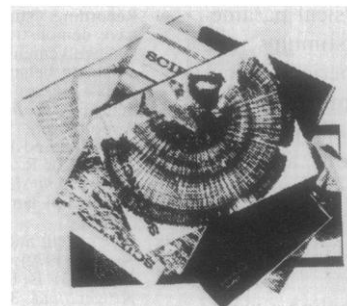
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**Staff Scientist II:** Defines and carries out measurement program for determining the energy efficiency of fenestration systems; and coordinates the calibration and field operation of a mobile measurement facility and related instrumentation. This will include both "hands-on" experimental work and data collection/analysis as necessary to establish the facility calibration and performance. Publish results in articles and reports. Applicant must be familiar with electronics, automated data collection, high-level computer language and data analysis. Requires Ph.D. in Physics or Engineering strongly preferred. Please specify Job #A/0933.

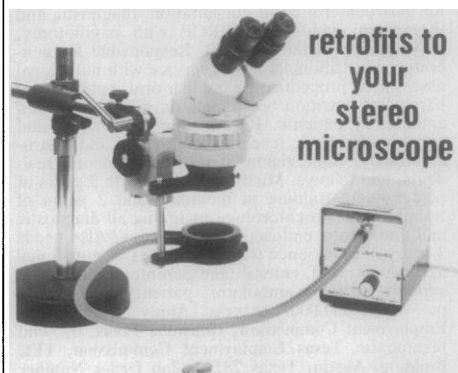
**Staff Scientist I:** Participates in the above assignments as a junior scientist. Prefer an advanced degree in Physics or Engineering. Please specify Job #A/0934.

Please send two resumes (indicate appropriate job #) to: Lawrence Berkeley Laboratory, Employment Office, Building 65, One Cyclotron Road, Berkeley, CA. 94720. An equal opportunity employer, m/f/h.



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## POSITIONS OPEN

**ASSISTANT PROFESSOR OF MEDICINE** needed for gastroenterological consultation; diagnostic and therapeutic endoscopy (ERCP with papillotomy, polypectomy, sclerotherapy). Responsible for generating a nutritional support service with nutritional assessment procedures; establish oral, enteral, and parenteral nutrition techniques on hospitalized and ambulatory patients. Responsible for original and collaborative basic research in nutrition and gastroenterology. Supervision of medical students, residents, and fellows. Must have M.D. with 3 years of postgraduate training in medicine and 2 years of training in gastroenterology including all diagnostic and therapeutic endoscopic procedures. Also needs 3 years of experience with techniques of nutritional assessment; oral, enteral, and parenteral nutritional support, including ambulatory patients. Forty hours per week; \$60,000 per year. Apply at: the Texas Employment Commission, Houston, Texas, or send résumé to: Texas Employment Commission, TEC Building, Austin, Texas 78778, Job Order Number 3181249. Ad paid by an Equal Opportunity Employer.

### ASSISTANT RESEARCH PHYSICIST OR ASTRONOMER SPACE SCIENCES LABORATORY University of California, Berkeley

**EUV SPECTROSCOPY.** The Space Sciences Laboratory of the University of California at Berkeley has an opening for an assistant research astronomer or physicist. The position will be for a period of 1 year with high likelihood of extension and will begin 1 October 1983. The major responsibility of the position will be the development of EUV spectrometers for an astronomy satellite. A Ph.D. in physics or astronomy with experience in space instrumentation is required. Experience with reflection grating spectrometers and microchannel plate detectors is desirable.

Send résumé and three letters of recommendation by 1 September 1983 to:

Professor C. S. Bowyer  
Space Sciences Laboratory  
University of California  
Berkeley, Calif. 94720

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### THE UNIVERSITY OF CALIFORNIA, IRVINE

Department of Psychiatry and Human Behavior is seeking applicants for a **BIOCHEMIST** to develop a clinical psychopharmacology laboratory. Applicants should have a Ph.D. in biochemistry and at least 5 years of experience in related work. He/she will be responsible for developing and supervising assays of antidepressants and other drugs, biological fluids for neurotransmitters, metabolites, and hormones. Expertise in norepinephrine metabolite measurement is requisite. Applicant should have expertise with GC, HPLC, and computer technology and must have supervised technicians. A record of publications and independent research interests is also needed. Applicant should have experience in supervising the development of a laboratory. Interested parties should send curriculum vitae and list of three to five references to:

Lawrence D. Sporty, M.D.  
Clinical Professor and Vice-Chairman  
Clinical Services  
Department of Psychiatry and Human Behavior  
University of California, Irvine  
Medical Center  
101 City Drive South  
Orange, California 92668

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

**BIOCHEMIST.** Postdoctoral research associateship (2-year) with U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Northern Regional Research Center, Peoria, Illinois. Incumbent conducts research on properties and occurrence, in various parts of the soybean plant, of seed lectins specific for D-glucuronic acid and D-galactose. These lectins interact with exopolysaccharides of *Rhizobium japonicum* and thereby are thought to participate in specific recognition leading to nodulation of the legume. Graduate training in isolation of plant proteins and a knowledge of plant biochemistry are considered desirable. Salary: GS-11 (\$24,508 per annum); U.S. citizenship is required. Send curriculum vitae to: Dr. M. E. Slodki (S), USDA-ARS, Northern Regional Research Center, 1815 North University Street, Peoria, Ill. 61604. An Equal Opportunity Employer.

## POSITIONS OPEN

**BIOCHEMIST**—The University of Oklahoma through the College of Medicine announces a senior-level position for a biochemist who will establish a program in biochemistry interfacing with occupational and environmental health. This leadership position requires a candidate with a strong record of publications and grant support. The successful candidate will be prominent in a relevant area of basic research and prepared to generate extramural funding. A Ph.D. in biochemistry is required. Candidate must be further qualified for an appointment in urology in order to establish a program in biochemistry of the genitourinary tract. Candidate will teach graduate courses in biochemistry and public health. Curriculum vitae and names and addresses of three references should be sent to: George P. Hemstreet, III, M.D., Ph.D., Secretary, Search Committee, Department of Urology, College of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, Oklahoma 73190.

### BIOCHEMISTRY/MOLECULAR BIOLOGY

Our laboratory is investigating the bacterial bioluminescence system. We have three positions open for postdoctoral/research associate level people. The first position is in the broad area of protein chemistry and enzymology. The project is aimed specifically at development of bioluminescence-based clinical assays. The second position is in the area of recombinant DNA technology. The project is to apply recombinant DNA technology, specifically sequencing of cloned genes and site-directed mutagenesis, to long-standing problems of importance in the area of enzyme structure and function. The third position is to investigate the biochemical mechanisms that lead to inactivation and degradation of specifically targeted enzymes. These projects constitute challenging research opportunities for individuals capable of independent investigation. Interested parties should send curriculum vitae and a statement of background, career goals, and research interests to:

Dr. Thomas O. Baldwin  
Department of Biochemistry and Biophysics  
Texas A & M University  
College Station, Texas 77843  
Telephone: 409-845-1782

### CELL PHYSIOLOGIST OR BIOLOGIST —RESEARCH ASSOCIATE

Candidate with proven ability to collaborate in ongoing project to study growth regulation in epithelial cells. Tissue culture experience required. Send curriculum vitae and names of three references to: F. Gary Toback, M.D., Ph.D., Department of Medicine, University of Chicago, 950 East 59 Street, Chicago, Ill. 60637. Telephone: 312-962-1476.

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### INSTITUT DE RECHERCHES CLINIQUES DE MONTRÉAL Poste de Directeur Scientifique

L'Institut de Recherches Cliniques de Montréal est une institution consacrée à la recherche biomédicale orientée vers l'étude des aspects diagnostiques, étiologiques, et thérapeutiques des maladies humaines. Affilié à l'Université de Montréal mais sous une administration indépendante, il abrite 300 employés, 25 laboratoires, 50 chercheurs subventionnés, et un centre de bioéthique. On y poursuit des travaux sur des thèmes aussi variés que la neurobiologie, l'hypertension artérielle, les récepteurs hormonaux, les hormones peptidiques, les hyperlipidémies, la biologie moléculaire, le diabète, et la pharmacologie clinique.

Le Dr. Jacques Genest, directeur-fondateur de l'Institut, se retire le 1er juillet 1984 et un comité de sélection procède actuellement à l'étude des candidatures au poste de **DIRECTEUR SCIENTIFIQUE**. Ce comité aimerait que se fasse connaître toute personne intéressée qui répondrait aux qualifications suivantes: un scientifique connu internationalement pour la qualité de ses travaux de recherches, docteur en médecine ou en sciences, francophone possédant une bonne connaissance de l'anglais, ayant fait preuve de leadership dans le milieu académique, et démontré des capacités d'administrateur. Il faut que le candidat soit convaincu de l'importance de la recherche clinique et soit au fait des axes majeurs de développement à lui donner. Les conditions d'engagement sont à discuter.

Le curriculum vitae et toute correspondance relative à ce poste doivent être adressés avant le 31 décembre 1983 à: M. Marcel Piché, Président du Comité de Sélection, 1010 rue Sherbrooke, ouest, Montréal, Québec, Canada H3A 2R7.

## POSITIONS OPEN

Applications are sought for a Board-eligible, formally trained Ph.D. in **CLINICAL CHEMISTRY** to fill a tenure-track position at the level of **assistant professor**. A minimum of 1 year of experience in the administration of a clinical chemistry laboratory, including a high-volume stat laboratory, is required. Successful candidate must have a demonstrable and active ongoing interest in research, teaching experience, and an outstanding publication record. Salary commensurate with qualifications. Send curriculum vitae and three references to: Joseph Wiener, M.D., Chairman, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

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Joint Oceanographic Institutions Inc., a consortium of U.S. academic oceanographic institutions, is seeking a mid-level **CONTRACTS ADMINISTRATOR** to undertake responsibilities associated with a major 10-year program of scientific ocean drilling. Candidates should have an appropriate educational background and at least 5 years of significant experience in the field, preferably involving academic institutions. Familiarity with federal procurement regulations and nonprofit organization contracting procedures is essential. Experience with ships or other large-scale marine operations would be of value. Send résumé to: John H. Clotworthy, Vice President, Joint Oceanographic Institutions Inc., 2100 Pennsylvania Avenue, NW, Room 316, Washington, D.C. 20037.

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### EDITOR-IN-CHIEF—ANNUAL REVIEWS

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### FACULTY POSITION AVAILABLE

The Department of Medical Microbiology and Immunology, University of South Florida, seeks to appoint a **professor** to a tenure-track position effective 1 September 1983. Applicant must be an internationally recognized authority on various aspects of interferon research from molecular biology/virology to clinical applications. Must have extensive research and publications in the field and must have administrative experience in directing research group. Letters of recommendation and applications should be sent to:

Herman Friedman, Ph.D.  
Professor and Chairman  
Department of Medical Microbiology and Immunology  
University of South Florida College of Medicine  
MDC Box 10-12901 North 30 Street  
Tampa, Fla. 33612

**MOLECULAR BIOLOGIST**—The Center for Ulcer Research and Education (CURE) of the University of California, Los Angeles, School of Medicine, will have an opening soon for a faculty position. We are inviting those with research experience in molecular biology and a particular interest in membranes and peptides to inquire. Rank salary is open and will be commensurate with qualifications. M.D. or Ph.D. required. Those interested should submit curriculum vitae, bibliography, and a list of three references to:

Dr. Nicholas Brecha  
CURE  
Building 115, Room 203  
VA Medical Center, Wadsworth  
Los Angeles, Calif. 90073

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# PSYCHOLOGY/ HUMAN FACTORS ENGINEERING

MITRE is one of this country's elite systems engineering firms devoted to designing, developing and implementing advanced technological systems for a variety of defense and non-defense clients.

We are currently seeking qualified individuals experienced in cognition, human factors and/or organizational psychology to help in research, analysis and design of command, control, communications and intelligence (C<sup>3</sup>I) and air traffic control systems.

Position requires demonstrated skills in psychological assessment, experimental design, quantitative measurement and written/verbal expression. The ability to work with teams including systems analysts and engineers is required. Skills in computer simulation, expert systems, decision aids, artificial intelligence, and experience with command and control systems are highly desirable.

Requires a PHD in cognitive, organizational, experimental or human factors engineering. Interested applicants please send resume to:  
M.P. Mason, The MITRE Corporation,  
1820 Dolley Madison Boulevard,  
McLean, VA 22102. We are an Equal  
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...for an innovative group dedicated to new research directions in drug delivery systems. The selected professional will have a PhD in Pharmacy, augmented by 2-3 years of postdoctoral experience in the pharmaceutical industry specifically in drug delivery development.

### SR RESEARCH SCIENTIST

...for dosage form development of new prescription products, as well as reformulation work on existing products and packages as necessary. Responsibilities will be in the areas of liquid, semi-solid, and solid dosage forms and successful candidacy requires a PhD in Pharmacy with a minimum of 0-2 years pharmaceutical industry experience in these areas.

The above positions are based in our new and expanding fully equipped research facility in Rochester, New York, where an environment committed to excellent and innovation encourages YOUR best ... and rewards it accordingly. Qualified professionals are invited to forward resumes with salary history to: PATRICIA PRINGLE, EMPLOYMENT RECRUITER.

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## RESEARCH IMMUNOLOGIST/ PHARMACOLOGISTS

Allergan Pharmaceuticals, a leading international manufacturer of ophthalmic and dermatologic products, currently has outstanding career opportunities in our expanding Biochemistry Department. We are looking for doctoral level scientists to join our research efforts directed toward the discovery of new therapies for ocular and dermal diseases.

The successful candidates will have 1-3 years experience in ocular or dermal immunology or immunopharmacology. Responsibilities will include planning, supervising and conducting research on the mechanisms of pharmacological control of inflammation and immune regulation.

Additional qualifications include expertise in statistical analysis and/or computer applications. An established research record and excellent communication skills are essential.

We are offering competitive salaries, a comprehensive benefits program and a stimulating scientific environment in a rapidly growing Southern California company. For immediate consideration, send resume with salary history to Ann Schneider.

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## RESEARCH ECONOMIC GEOLOGIST

The Department of Mineral Sciences at The American Museum of Natural History is seeking applicants for a curatorial research position in Economic Geology. Major responsibility is to carry out a vigorous research program involving field and laboratory studies on the origin and development of ore deposits anywhere in the world. Close working relationships with other researchers to broaden the scope of the work are encouraged. Involvement with graduate students, if desired, is also possible. Minor responsibilities include some collections development and public programs (symposium or exhibition). The position offers the freedom and support to carry out major research projects on a large scale, unfettered by major administrative or academic responsibilities.

The Department has excellent laboratory facilities including an automated electron microprobe, X-ray facilities, sample preparation laboratory, photographic and graphic support, and computers. A PhD in Economic Geology is required and the position is open to persons of any rank, with salary negotiable.

Candidates should submit a resume (including a statement of research interest), salary requirements, and the names of three references by October 15, 1983 to:

Dr. Martin Prinz  
Search Committee

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Applied Certified Patented  
Technology, Inc.  
125 Worth Ave., Suite 116  
Palm Beach, FL 33480

## POSITIONS OPEN

### FACULTY POSITION— BIOMEDICAL MASS SPECTROMETRY

Professorship at a level based on prior experience and qualifications for a position to be filled during 1983. The primary qualification is development of a strong research program in any area of biomedical mass spectrometry. Departmental research programs in the areas of drug design, membrane structure, receptor structure, and drug-receptor complex structure would benefit from specific interest in applying mass spectrometry to such problems. The department has a well-equipped mass spectrometry laboratory that includes a Kratos MS50S high-resolution, high-field magnet and data system, a Varian MAT 311 and data system, and a Finnegan 4023 GCMS and INCOS 2000 data system. The successful applicant would also participate in the teaching of bioanalytical courses at the graduate and undergraduate level.

Candidates should provide curriculum vitae, three letters of recommendation, and a summary of research interest by 15 September 1983 to: **Dr. John M. Cassidy, Head, Department of Medicinal Chemistry and Pharmacognosy, School of Pharmacy, Purdue University, West Lafayette, Ind. 47907. Purdue University is an Equal Opportunity/Affirmative Action Employer.**

### POSITION IN HUMAN ANATOMY

Applications are invited for a position in the Department of Human Anatomy. Ability to establish an independent research program and attract extramural funding in the area of cellular biology essential. Primary teaching responsibilities will be in gross anatomy. One or 2 years of postdoctoral experience required. Appointment at the assistant or associate professor level depending on individual's qualifications. Send complete curriculum vitae, including a statement of research interests and five letters of reference, to: **Dr. Andrew G. Hendrickx, Search Committee Chair, Department of Human Anatomy, School of Medicine, University of California, Davis, Calif. 95616.** Application deadline is 1 October 1983. Only complete applications will be considered. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

### MICROBIOLOGISTS

The Department of Biological Sciences, Purdue University, invites applications for a tenure-track faculty position at any rank. Applicants with research experience and teaching interests in one or more of the following areas are especially encouraged to apply: microbial genetics, microbial physiology, microbial pathogenesis, and eukaryotic microbiology. Send curriculum vitae, including a brief description of research experience and plans and the names of three references, to: **Microbiology Search Committee, Department of Biological Sciences, Purdue University, West Lafayette, Ind. 47907.** Applications should be submitted by 30 October 1983.

*Purdue University is an Equal Opportunity/Affirmative Action Employer.*

**MOLECULAR GENETICIST.** Assistant professor, Department of Avian Sciences, and assistant geneticist in the Experiment Station, University of California, Davis, to work with avian material; 30 percent undergraduate and graduate teaching and advising; 70 percent research; 11-month tenure-track appointment. Background in somatic cell genetics, molecular biology, cell biology, or virology required. Experience with avian material preferred. Submit résumé with teaching experience, transcripts, reprints, and names and addresses of four references by 15 November 1983 to: **Dr. Barry W. Wilson, Avian Sciences, University of California, Davis, Calif. 95616.** *The University of California is an Equal Opportunity Employer.*

### POSTDOCTORAL POSITIONS

Two postdoctoral positions will be available on approximately 1 September 1983, in the area of electron transport and energy transduction in biological membranes. These positions will involve studies with cytochrome b-c complexes utilizing EPR and absorbance techniques. Available initially for 1 year with the possibility of renewal for a second year. Send curriculum vitae and names of three references by 1 October 1983 to: **Dr. Richard Malkin, 313 Hilgard Hall, University of California, Berkeley, Calif. 94720.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

Genetics Institute is a well-funded, rapidly expanding company actively engaged in the development and application of recombinant DNA technology to human health care, agriculture, and chemicals.

We are seeking skilled and highly motivated scientists at all degree levels.

- **Bacterial Expression:** Application of recombinant DNA methodology and bacterial genetics to the optimization of heterologous gene expression in bacteria.
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- **Mammalian Expression:** Modification of cultured cells to overproduce desirable proteins by introduction of cloned genes using a variety of vector systems. Candidates having primarily tissue culture experience will also be considered.
- **Microbial Physiology, Biochemistry, Biochemical Engineering:** Design of fermentation processes to maximize the production of recombinant proteins and other products. Successful candidates will work in close collaboration with scientists in gene expression and protein purification. Experience with fermentation development, particularly relating to antibiotics, amino acids, or enzymes, would be a definite asset.
- **Molecular Biology:** Experience in recombinant DNA methodology, DNA sequencing, and analysis of gene structure and/or expression.
- **Monoclonal Antibodies:** Production of antibodies for protein characterization and purification.
- **Protein Chemistry:** Development of procedures for purification of proteins produced through recombinant DNA technology. Successful candidates must have demonstrated skills in protein isolation and characterization.

**We offer equity participation in addition to a competitive salary and a complete benefits package.**

**Qualified candidates should forward their resumes, including the names of three individuals we may contact for references, in confidence to: Personnel Office; Genetics Institute; 225 Longwood Avenue; Boston, Massachusetts 02115.**

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## ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE UNIVERSITY OF MIAMI

The Division of Marine Geology and Geophysics is seeking candidates for **FOUR DIFFERENT FACULTY POSITIONS**. For all these positions a Ph.D. degree plus evidence of the ability to obtain funding is a prerequisite. We are seeking candidates who can interact with other faculty members within the Division and the School. The four positions are as follows.

**TENURE-TRACK POSITION IN GEOPHYSICS** for an individual experienced in heat flow and hydrology of the oceanic crust who can work with geologists and geochemists on studies of hydrothermal circulation. An emphasis on field measurements, which will lead to an understanding of the interaction of hydrothermal circulation with geochemical and tectonic processes, is an important feature of current work. This position is at the **assistant professor** level.

**TENURE-TRACK POSITION IN MARINE PALEOECOLOGY** for an individual interested in reefal or other tropical marine environments. This position will be at the **assistant or associate professor** level.

**NONTENURE-TRACK POSITION IN PHYSICAL OCEANOGRAPHY AND FLUID DYNAMICS** who can interact with geologists and geochemists on studies of the circulation in ancient oceans. An emphasis on thermohaline circulation processes and on the interaction of the physical circulation with chemical and geological processes is an important feature of current work. This position will be at the **research assistant professor** level.

**NONTENURE-TRACK POSITION FOR A GEOCHEMIST** with demonstrated experience in the application of stable isotopes to problems of deposition and diagenesis of marine carbonates. This position will be at the **research assistant professor** level.

Please send application, including curriculum vitae, statement of research interests, and the names of three referees to: **Dr. C. G. A. Harrison, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, Florida 33149**, who will pass them on to the relevant search committee. *The University of Miami is an Equal Opportunity/Affirmative Action Employer.*

## Cardiovascular Biology

### ASSISTANT OR ASSOCIATE PROFESSOR

The Department of Pharmacology and Cell Biophysics of the University of Cincinnati College of Medicine announces a faculty position available for a Ph.D., M.D., or M.D./Ph.D. in the area of cellular cardiovascular pharmacology. Research interests should complement a department whose main interest is in cellular regulation of muscle with a heavy emphasis on calcium-modulated systems. A Program Project Grant (Cellular Mechanisms of Heart Failure) and Training Grant (Cardiovascular Biology) are the underpinnings of support for research and training. Applicants should have a track record of research accomplishments and external funding. He or she should be prepared to continue an independent program but should be desirous of establishing interactions with the existing program. Teaching duties are minimal. Send resumé and the names of three references to **Dr. Earl T. Wallick**. We are an Equal Opportunity Employer.

**Dr. Earl T. Wallick, Head:**  
**Pharmacology Search Committee**  
**Department of Pharmacology and Cell Biophysics**  
**University of Cincinnati College of Medicine**  
**ML 575, 231 Bethesda Avenue**  
**Cincinnati, Ohio 45267**

## ASSISTANT PROFESSOR OF BIOCHEMISTRY

The Department of Biochemistry, Thomas Jefferson University, invites applications for the above position to be activated July 1, 1984. Candidates should have a minimum of 2 years postdoctoral training and a strong background in biochemistry and molecular biology.

Demonstrated ability to initiate an independent research program and to engage in teaching activities of the Department are expected.

Send curriculum vitae, bibliography, a short summary of research goals, and the names of three professional persons acquainted with the work of the applicant. Send applications, for receipt by October 1, 1983, to:

**DR. PAUL H. MAURER, Chairman**  
**Dept. of Biochemistry**



**JEFFERSON MEDICAL COLLEGE**  
**THOMAS JEFFERSON UNIVERSITY**  
**Philadelphia, PA 19107**

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## POSTDOCTORAL AND GRADUATE RESEARCH ASSISTANT POSITIONS IN PLANT MOLECULAR BIOLOGY

Three postdoctoral fellows and eight graduate research assistant positions funded by The McKnight Foundation are available immediately to study the molecular biology of developing maize endosperm at the University of Minnesota. Specific areas to be investigated during endosperm development in maize include: (i) the physical organization and replication of the maize nuclear genome; (ii) purification and characterization of the aspartate family pathway enzymes and their mRNA's; (iii) transcriptional regulation of gene expression especially related to rRNA, zein, and aspartate family pathway genes and possible hormonal controls or influence; and (iv) mitochondrial gene organization and expression. Faculty involved in this interdisciplinary research project are from Agronomy and Plant Genetics (R. Phillips and B. Gengenbach), Biochemistry (J. Messing), Botany (R. Dale and T. Guilfoyle), Genetics and Cell Biology (I. Rubenstein), Horticulture (M. Brenner), and Plant Pathology (R. Brambl). Graduate research assistants have the opportunity to work among different faculty involved in this project and can obtain degrees in biochemistry, botany, cell biology, genetics, horticulture, plant breeding, plant pathology, or plant physiology.

Salaries are \$18,000 for McKnight postdoctoral fellows and about \$9,000 for McKnight graduate research assistants in the first year of the project. Continued funding is available for at least one additional year for postdoctorals and at least two additional years for graduate research assistants. Annual stipends for laboratory supplies and travel are included with these positions. Postdoctoral applicants should send curriculum vitae and three letters of recommendation to: **Dr. Ronald L. Phillips, Project Coordinator, Department of Agronomy and Plant Genetics, University of Minnesota, 1509 Gortner Avenue, St. Paul, Minn. 55108**; telephone: 612-373-1366, or to any member of the faculty involved with this project. Prospective graduate students should contact the appropriate faculty member associated with this project or Dr. Ronald L. Phillips for further information. Postdoctoral applications should be submitted by 1 September 1983.

*The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

## POSITIONS OPEN

### THE UNIVERSITY OF CALGARY POSITIONS IN MOLECULAR OR CLINICAL ENDOCRINOLOGY

The Endocrine Research Group at The University of Calgary seeks new faculty members with expertise in the areas of molecular or clinical endocrinology. Candidates must be qualified to compete for scholarships funded either by the Alberta Heritage Foundation for Medical Research or the Medical Research Council of Canada. Although positions at the assistant professor level are envisioned, applications from more senior investigators will be considered. *In accordance with Canadian immigration requirements, this ad is directed to Canadian citizens and permanent residents.* Other qualified applicants should also apply. The final date for consideration is 1 September 1983. Applications, including complete curriculum vitae and at least two personal references, should be sent to:

Dr. D. Hanley  
Endocrine Research Group  
Health Sciences Centre  
Room 2961  
The University of Calgary  
3330 Hospital Drive, NW  
Calgary, Alberta, Canada T2N 4N1

**PATHOLOGY.** Dynamic pathologist AP/CP with commitment to service and interest in research, teaching, and pediatric diseases to join group. Competitive salary and fringe benefits. Send curriculum vitae to: Stanley B. Smith, M.D., Department of Pathology, Miami Children's Hospital, 6125 S.W. 31 Street, Miami, Florida 33155.

**PATHOLOGIST** (Wayne County General Hospital)—The University of Michigan Medical School, Department of Pathology, is seeking a pathologist (Board-certified or -eligible in both anatomic and clinical pathology) for an academic position that will involve responsibility for service activities in the Clinical Laboratories. There will be opportunities for teaching related to medical students and residents as well as opportunities to become involved in research activities. Appointment to this position carries a full academic title in the Department of Pathology at the University of Michigan Medical School. Candidates should contact: Peter A. Ward, M.D., Department of Pathology, University of Michigan Medical School, 1315 Catherine Road, Ann Arbor, Mich. 48109; telephone: 313-763-6384; or Robert W. Schmidt, M.D., Department of Pathology, Wayne County General Hospital, 2345 Merriman Road, Westland, Mich. 48185; telephone: 313-274-3000, extension 6171. A nondiscriminatory, Affirmative Action Employer. Code 30.

**PHARMACOLOGY/TOXICOLOGY.** A tenure-track assistant professor position, in the College of Veterinary Medicine, is available for fall 1983. Applicants in the field of pharmacology or toxicology are invited to apply. D.V.M. and/or Ph.D. degree is required. Duties include teaching professional and graduate courses and establishment of a vigorous, independent research program. Closing date is 15 August 1983. Send letters of application, curriculum vitae, three references, and a summary of research interests to:

Dr. John O. Dickinson, Chairman, Search Committee  
College of Veterinary Medicine  
Washington State University  
Pullman, Wash. 99164-7012

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

**POSTDOCTORAL FELLOW** in radiation biology required. Experience desirable in mammalian cell culture, the biology and biochemistry of radiosensitizers, and the effects of low dose rate. Applicants should send curriculum vitae, reprints, and three letters of reference to: Dr. Eric J. Hall, Professor of Radiology, Radiological Research Laboratory, Columbia University, 630 West 168 Street, New York, N.Y. 10032. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available September 1983 to study in vitro and in vivo metabolism of plant toxins, specifically the pyrrolizidine alkaloids and their toxic effects. Desire a candidate with biochemical, toxicology, or pharmacology background with interests in the toxic effects of natural products. Send curriculum vitae and names of three references to: Dr. H. J. Segall, Department of Veterinary Pharmacology and Toxicology, University of California, Davis, Calif. 95616. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**PLANT PHYSIOLOGIST.** Research on physiological plant responses to soil physical and chemical changes associated with conservation tillage practices. Knowledge of plant moisture stress effects on photosynthesis, translocation, and nutrient utilization is desirable. Career research position with U.S. Department of Agriculture (USDA) at North Central Soil Conservation Research Laboratory in Morris, Minnesota. Minimum salary: \$24,508. For applications, contact: Marie Bishop, USDA-ARS-NCRO-B2, 2000 West Pioneer Parkway, Peoria, Ill. 61615. Telephone: 308-671-7134. *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION IN IMMUNOLOGY.** Positions available for qualified Ph.D.'s to study mechanisms of transmembrane signaling in lymphocytes. Studies will focus upon flow cytometric and biochemical analysis of early changes in cell physiology resultant from ligand binding to cell surface receptor immunoglobulin and receptors for growth and differentiation inducing lymphokines, and coupling of these phenomena to subsequent changes in cell function. Stipend as per NIH criteria. Send curriculum vitae and names of three references to: Dr. J. C. Cambier, National Jewish Hospital and Research Center, 3800 East Colfax Avenue, Denver, Colorado 80206.

**POSTDOCTORAL POSITION IN PHARMACOLOGY** available 1 August to study pharmacology of porphyrins and other photosensitizers. Requires experience in HPLC, spectroscopy, and pharmacokinetics. Annual appointment renewable for up to 3 years. Send curriculum vitae and three references to: Dr. David Kessel, Department of Pharmacology, Wayne State University School of Medicine, Detroit, Mich. 48201. *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available September 1983 to study the effects of hormones on the growth and transport functions of cultured kidney epithelial cells in serum-free medium. Applicants should have a Ph.D. in biochemistry, physiology, or cell biology. Experience in membrane transport or cell culture is desirable but not essential. Our laboratory is developing selective media for primary kidney cultures, using the hormone supplements in defined media as a tool. Membrane transport and its regulation by hormones is being examined both in the primaries and in the established kidney epithelial cell line MDCK. Genetic variants of MDCK cells defective in their hormonal control of either transport or growth are being isolated and studied in serum-free medium. Send curriculum vitae and names of three references to:

Dr. Mary L. Taub  
Department of Biochemistry  
102 Cary Hall  
State University of New York at Buffalo  
Buffalo, New York 14214  
Telephone: 716-831-3300

**POSTDOCTORAL POSITION IN MOLECULAR RADIOBIOLOGY** available 1 September 1983 for studies on DNA base damage produced in vitro and in vivo by ionizing radiation. Ph.D. in biochemistry or physical chemistry with background in spectroscopy or chromatography required. Desire to learn immunochemistry and HPLC techniques preferred. Please send curriculum vitae and three letters of reference by 15 August to: Dr. John D. Zimbrick, Radiation Biophysics, University of Kansas, 140 NRC, Lawrence, Kans. 66045. *An Equal Opportunity/Affirmative Action Employer.*

### POSTDOCTORAL POSITION

A funded postdoctoral position is available for work on the mechanisms of bacteriophage assembly. Send curriculum vitae and names of at least two references to: Dr. Philip Serwer, Department of Biochemistry, The University of Texas Health Science Center, San Antonio, Texas 78284.

### POSTDOCTORAL POSITION IN VIROLOGY

Available immediately for research on molecular biology of human viral gastroenteritis agents. Experience with immunoassay and with purification and biophysical characterization of viruses and viral protein and nucleic acids is essential.

Send résumé and have three letters of recommendation sent to: Dr. Neil R. Blacklow, Division of Infectious Disease, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605. *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**POSTDOCTORAL POSITION.** A postdoctoral position is available immediately for a period of 1 year, renewable to 2 years. Experience and training in cholesterol and bile acid metabolism and techniques of enzyme purification essential. Stipend: \$15,000 per year. Apply: Ajit Sanghvi, Ph.D., Department of Pathology, University of Pittsburgh School of Medicine, Pittsburgh, Pa. 15261.

**POSTDOCTORAL POSITION** available to study lipid and lipoprotein metabolism in suckling rats. Experience with lipids or lipoproteins desirable. Position available after September 1983. Starting salary: \$15,000. Send curriculum vitae and names and telephone numbers of three references to: Dr. Michael A. Wells, Biochemistry Department, Bioscience West, University of Arizona, Tucson, Ariz. 85721. *An Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.*

**POSTDOCTORAL POSITION** available for the study of the mechanism of immunodeficiency that occurs in individuals with acquired immune deficiency syndrome (AIDS). Research involves identification of cellular abnormalities, defining the role of antibody-mediated immunity in AIDS. A strong background in cellular-immunological techniques, immunochemistry, and tissue culture required. Flow cytometry experience desirable. Send curriculum vitae, representative publications, names of three references, and statement of current research to: Dr. Conrad H. Casavant, Clinical Laboratories M523, University of California, San Francisco (UCSF), San Francisco, Calif. 94143. *UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

**POSTDOCTORAL POSITION.** Molecular biology of the killer virus of yeast, including recombinant DNA analysis, RNA transcription, RNA-RNA interactions, genetics. Experience in nucleic acid technology desirable. Send curriculum vitae and names of three references to: Dr. M. J. Leibowitz, Department of Microbiology, University of Medicine and Dentistry of New Jersey-Rutgers Medical School, P.O. Box 101, Piscataway, N.J. 08854. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available now for immunochemical studies of helical nucleic acids. Opportunity for combinations of analysis by monoclonal antibodies, NMR, electron microscopy, and for study of DNA in chromatin. Send curriculum vitae and three references to: Dr. B. David Stollar, Department of Biochemistry and Pharmacology, Tufts University School of Medicine, 136 Harrison Avenue, Boston, Massachusetts 02111. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available immediately for the study of enzymic initiation of DNA repair. Project includes purification and characterization of repairs and analysis of substrate damage by HPLC and DNA-sequencing techniques. Send curriculum vitae and references to: Dr. Nahum Duker, Pathology Department, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, Pa. 19140. *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL/RESEARCH ASSOCIATE.** Position available immediately for biophysical studies of cell membrane lipids. Opportunity to use biophysical methods (x-ray/neutron diffraction, calorimetry, NMR, and so forth) to investigate lipid structure and interactions. Doctorate in chemistry, biochemistry, biophysics, or related area required. Send curriculum vitae, publications, and names of three references to: Dr. G. Graham Shipley, Biophysics Institute, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118, attention: Linda McNeil.

**UNIVERSITY OF NORTH CAROLINA—POSTDOCTORAL/RESEARCH ASSOCIATE.** Two positions for 1 to 3 years available immediately, in Department of Pharmacology, University of North Carolina at Chapel Hill. The persons will be engaged in the development of anticancer and antiviral agents based on the study of molecular mechanism of drug action on DNA metabolism and of drug resistance. Experience in enzymology, cell biology, and molecular biology is desirable. Send curriculum vitae and three letters of reference to: Dr. Yung-chi Cheng, Department of Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, N.C. 27514. *The University of North Carolina is an Equal Opportunity/Affirmative Action Employer.*

# Divisional Fellows

The Lawrence Berkeley Laboratory is operated by the Regents of the University of California on behalf of the Department of Energy of the Government of the United States of America. It is a multi-disciplinary National laboratory engaged in various programs of energy research and is located contiguously with the Berkeley campus of the University of California, situated in the San Francisco Bay Area.

The Engineering and Technical Services Division of the Lawrence Berkeley Laboratory is seeking suitable candidates for appointment as Divisional Fellows. Divisional Fellows are persons with outstanding promise, creative ability and leadership potential. Successful candidates would have considerable experience in their area of technical expertise; demonstrated ability to interact effectively with Scientists and Engineers engaged in the various programs of the Laboratory; and the ability to implement projects within the goals and resources of the Laboratory. Experience as a Project Leader is preferred.

## (I) Heat Transfer Engineer

As a Division Fellow, the incumbent will have a major responsibility for heat transfer analysis associated with the design of components used in particle physics beam devices and expertise in all areas of heat transmission analysis. A working knowledge of existing computer codes for the three-dimensional analysis of heat flow, temperature distribution and thermally induced mechanical strains caused by transient heat transmission conditions is highly desirable. The incumbent will also serve as a resource for heat transfer methods and codes and will supply technical advice and counsel to Laboratory scientific and engineering staff working on projects requiring sophisticated heat transfer analysis.

A Ph.D. in Mechanical Engineering is preferred with field of study in heat transfer and numerical analysis. At least five years' professional experience is required. **Refer to job #A/2191**

## (II) Materials Engineer

The Divisional Fellow will have the opportunity to contribute to a wide range of diverse high technology projects and will provide a focal point for materials expertise within the division. An important responsibility is expected to be the establishment of a data base for design. Material and surface properties, as they affect the performance of components and systems in a high vacuum environment, would be the primary areas of responsibility and would include material selection, joining processes, surface coatings, corrosion and the mechanisms of surface cleaning. Materials will include advanced alloys, non-metallic composites, ceramics and plastics, as well as traditional ferrous and non-ferrous engineering materials. Close interaction with Laboratory Project Engineering staff will be expected and will consist of consultation on specific on-going project materials problems, the updating of currently employed processes and techniques, and the establishment and development of new processes to meet the demands of advancing technology.

The position requires an advanced degree in Materials Science or Metallurgy coupled with several years experience in application to the practical solution of engineering problems. **Refer to job #A/2190**

## (III) Electronic Instrumentation for Particle Physics and Nuclear Science

Candidates for this position should have demonstrated technical leadership and excellence in the design and implementation of electronic components and systems used for the acquisition, processing and storage of data from experimental apparatus similar to that used in particle physics and nuclear science investigations. Candidates should have experience in disciplines such as: signal processing of nanosecond speed signals, transmission of signals in noisy environments, methods of digitizing signals, distributed processing of acquired data and computer interfacing and programming techniques. The person selected for this position will be expected to interact closely with the department staff by conducting seminars, consulting with staff on on-going instrumentation projects, and by aiding in establishing new techniques and facilities to augment those presently in use.

Fellows are appointed for terms up to five years with the expectation that they will demonstrate outstanding professional qualities during their fellowship to warrant promotion to a permanent position as Staff Senior Scientists/Engineers. The pursuit of independent research and development programs consistent with the broad goals of the Laboratory will be encouraged.

Salary is commensurate with experience up to a maximum of \$68,028/yr.

The Division is seeking applicants in the following engineering specialties:

- (I) Heat Transfer
- (II) Materials Engineering
- (III) Electronic Instrumentation — Physics
- (IV) High Power R-F systems and High Voltage Technology
- (V) Electronic Instrumentation — Accelerators

A Master's degree or a Ph.D. in Electronics Engineering, Computer Science, or a related discipline is desirable. A typical candidate will have at least five years' experience and will have demonstrated potential for leadership in the field. **Refer to job #A/2189**

## (IV) High Power R-F Systems and High Voltage Technology

The successful candidate will provide engineering design, implementation, and operational verification of electronic components and systems in support of the research divisions of the Laboratory. Innovative designing of electronics components, circuits, and systems for detecting, accelerating, and modulating charged particle beams will be a prime responsibility. Teaching and training other electronics engineers and performing independent research and development work related to Laboratory goals will be other significant responsibilities.

The Divisional Fellow will be an extremely competent electronics engineer, as evidenced by at least 5 years' professional experience with significant accomplishments, or extraordinary recommendations with an advanced degree or the equivalent. Background and training must be strong in high-power radio-frequency systems, high-power modulators, and high-voltage technology for work on particle acceleration. All candidates must have a thorough understanding of physical electronics and electromagnetic theory. **Refer to job #A/2188**

## (V) Electronic Instrumentation For Accelerators

The successful candidate will provide engineering design, implementation, and operations verification of electronic components and systems in support of the research divisions of the Laboratory. Innovative designing of electronics components, circuits, and systems for detecting, accelerating, and modulating charged particle beams will be a prime responsibility. Teaching and training other electronics engineers and performing independent R&D work related to Laboratory goals will be other significant responsibilities.

The Divisional Fellow will be an extremely competent electronics engineer, as evidenced by at least 5 years' professional experience with significant accomplishments, or extraordinary recommendations with an advanced degree or the equivalent. Background and training must be strong in communications theory, modulation, and stochastic processes. The emphasis of the work would be to concentrate in developing detectors, amplifiers, and signal processing devices for very low current particle beams in accelerators. All candidates must have a thorough understanding of physical electronics and electromagnetic theory. **Refer to job #A/2187**

Please send 2 resumes, letters of recommendation, publications and other appropriate material to **Walter Hartsough, Associate Director for the Engineering and Technical Services Division, #1 Cyclotron Road, Bldg. 50A, Rm. 4112, Berkeley, CA 94720 by September 30, 1983.** Equal Opportunity Employer.



LAWRENCE  
BERKELEY  
LABORATORY



## POSITIONS OPEN

### POSTDOCTORAL/RESEARCH ASSOCIATE POSITION

Available immediately to study visual system development in primates. Experience in electron microscopy and/or single unit recording desirable. Salary based on experience; Ph.D. required. Send curriculum vitae and names of three references to: **V. A. Casagrande, Department of Anatomy, Vanderbilt University, Nashville, Tennessee 37232.**

### POSTDOCTORAL RESEARCH ASSOCIATES.

Several positions open immediately for research involving mammalian cell genetics and molecular biology. Candidates should have a Ph.D. in biochemistry, genetics, or molecular or cell biology. Send curriculum vitae and names of three references to: **Dr. Richard Davidson or Raju Kuchelapati, Center for Genetics, University of Illinois College of Medicine, 808 South Wood Street, Chicago, Ill. 60612.** For fullest consideration, applications should be received by 1 September 1983. *The University is an Affirmative Action/Equal Opportunity Employer.*

### POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS

(two) available immediately or in the near future for up to 3 years for studies of oxidosqualene cyclase, 24,25-epoxycholesterol, novel inhibitors, and other aspects of sterol biochemistry. [See: *JBC*, 258, 378 (1983); *JACS* 104, 893 (1982); *JACS*, 103, 6974 (1981).] Background in protein biochemistry, lipid metabolism, isotope methodology needed. Salary negotiable, based on experience. Send three reference letters and curriculum vitae to: **Dr. Thomas A. Spencer, Department of Chemistry, Dartmouth College, Hanover, N.H. 03755.** *Affirmative Action/Equal Opportunity Employer.*

**TECHNICAL, PREDOCTORAL, AND POSTDOCTORAL POSITIONS** available in aquatic toxicology, aquatic ecology, or ecomodeling. Full-time positions: \$12,000 to \$17,500, depending on qualifications. Predoctoral fellowships: \$5,500. Send résumé and three references to: **Dr. W. J. Birge, Professor of Biology and Toxicology, 101 Morgan Building, University of Kentucky, Lexington, Kentucky 40506.**

### The Health Effects Institute (HEI) announces the availability of four requests for applications for research funds.

The Health Effects Institute is a nonprofit research organization founded in 1980. It was established co-operatively by the United States Environmental Protection Agency and the automotive industry but is governed by an independent 3-member Board of Directors: Archibald Cox, Carl M. Loeb Professor, Harvard Law School; William Baker, Chairman Emeritus, Bell Laboratories; and Donald Kennedy, President, Stanford University. The HEI funds research directed to understanding and evaluating the health effects of mobile source emissions. The research program was developed by HEI's Health Research Committee whose chairman is Walter Rosenblith, Institute Professor and former Provost of the Massachusetts Institute of Technology.

This set of four RFA's is the second and final series of requests to be issued under the Institute's Phase One Research Agenda. The RFA's are addressed to the following subjects: (i) Cardiovascular and other health effects of carbon monoxide, (ii) Nitrogen oxides and susceptibility to respiratory infections, (iii) Dose of airborne pollutants to target tissues, and (iv) Epidemiologic investigation of effects of automotive emissions.

The Health Effects Institute will make available a packet of material consisting of four RFA's, as well as descriptive material about the Institute to all interested investigators. Applications will be required by 23 September 1983.

*All requests and inquiries should be made to or through:*

**Dr. C. W. Powers, Executive Director, The Health Effects Institute, 215 First Street, Cambridge, Massachusetts 02142; telephone: 617-491-2926.**

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH ASSOCIATE** to participate in studies of control of development of peptidergic neurons. Degree in neuroscience with knowledge of microdissection, radioimmunoassay, immunocytochemistry, and cell culture techniques desirable. Send résumé and names of two references to: **Dr. Miles L. Epstein, Department of Anatomy, University of Wisconsin, Madison, Wis. 53706.**

**POSTDOCTORAL/RESEARCH ASSOCIATE POSITIONS** available immediately for studies on molecular neurobiology of neuronal specific proteins. Applicants with experience in DNA cloning and sequencing, and other modern DNA technologies. No neurobiological experience is necessary. Send résumé to: **Dr. Tong H. Joh, Neurobiology Laboratory, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.** Telephone: 212-472-5595.

**POSTDOCTORAL SCIENTIST.** Position presently available for psychologist/psychopharmacologist to participate in studies of alcohol, inhalants, and drugs of abuse to include the mechanism of drug-behavior interactions. Work will be under the supervision of Dr. Irving Geller, director of our Behavioral Pharmacology Department. Applicants should have dissertation research in operant conditioning with at least 1 year of relevant postdoctoral experience desired. Annual salary will range between \$17,784 and \$20,529, dependent upon experience relative to requirements. Please respond to: **Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284.** Include curriculum vitae, a description of research interests, and names of three references, including major professor, in initial correspondence. *An Equal Opportunity/Affirmative Action Employer.*

### PROFESSOR AND CHAIRPERSON DEPARTMENT OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS THE ALBANY MEDICAL COLLEGE

The Albany Medical College of Union University, located in Albany, New York, is seeking highly qualified applicants for the position of professor and chairperson, Department of Pharmacology and Experimental Therapeutics. This position represents an outstanding opportunity for an individual committed to excellence in medical and graduate teaching, research, and programs development. Applicants should have a strong record of academic achievement as reflected by scholarly publications, success in obtaining extramural funding, and peer recognition. Candidates must have demonstrated achievement in research and administration or provide evidence for leadership potential in these areas. The Albany Medical College is a private, 4-year medical school founded in 1839. It has strong and developing basic science and clinical research programs and a long tradition of excellence in medical education. Qualified individuals are invited to forward curriculum vitae and letter of interest to:

**Dr. Richard S. Smith  
Chairman, Pharmacology and Experimental  
Therapeutics Search Committee  
Department of Ophthalmology  
Albany Medical College  
Albany, New York 12208**

Closing date for applications is 30 November 1983. *The Albany Medical College is an Equal Opportunity/Affirmative Action Employer.*

### OREGON REGIONAL PRIMATE RESEARCH CENTER REPRODUCTIVE BIOLOGISTS (Two positions)

The Oregon Regional Primate Research Center has two openings in the Division of Reproductive Biology and Behavior for a **cell biologist** and a **reproductive endocrinologist**. Both positions are currently at the assistant scientist (assistant professor) level, but more experienced candidates will be considered for appointment at a higher level. We seek scientists who have or can develop independent research programs in cellular and molecular aspects of reproductive biology, and who wish to extend their research to nonhuman primates. Review begins 6 September 1983 and will continue until suitable candidates are selected. Applicants should send curriculum vitae, the names of three references, and a summary of research interests to: **Dr. Robert M. Brenner, Head, Division of Reproductive Biology and Behavior, Oregon Regional Primate Research Center, 505 N.W. 185 Avenue, Beaverton, Oregon 97006.** *The Oregon Regional Primate Research Center is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**RESEARCH ASSOCIATE**—University of Pennsylvania Cell Center. Coordinate the research support activities and the cell culture facilities of the Cell Center Core Facility. Initial appointment as research associate in human genetics will be eligible for appointment as research assistant professor. Should have extensive experience in cell culture techniques, including establishing cell lines from biopsies. Should have the ability to work well with others. He/she should be able to coordinate and direct the various daily activities of the Cell Center. Experience in immunological and/or molecular genetic techniques. Send curriculum vitae and three letters of recommendation to: **Dr. Roger H. Kennett, Department of Human Genetics, Medical Laboratories 195, School of Medicine, UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa. 19104.** *An Equal Opportunity/Affirmative Action Employer.*

**RESEARCH ASSOCIATE—SPACE AND UPPER ATMOSPHERIC PHYSICS.** Responsible for the processing and analysis of upper atmospheric and space plasma physics data obtained in the polar regions including the determination of quiet day curves using computer methods. Forty hours per week; 8:30 a.m. to 4:30 p.m.; \$16,500 per year. Ph.D. required in astronomy. Must have thorough knowledge of radio astronomy, celestial mechanics, theoretical dynamics, and plasma physics. Must be able to utilize computer in FORTRAN language. Bring copy of ad to: **Maryland State Employment Service, 6321 Greenbelt Road, College Park, Maryland; job order number 4097193.**

**RESEARCH ASSOCIATE: LUNG BIOCHEMISTRY.** Position open fall 1983 to study physiological control of turnover of lung proteins in intact perfused tissue and in cultured lung cells. Emphasis on cell type-specific proteins. Immunological and/or tissue culture experience desirable. Send curriculum vitae, statement of goals, and names of three references to: **D. Eugene Rannels, Ph.D., Department of Physiology, M.S. Hershey Medical Center, Pennsylvania State University, P.O. Box 850, Hershey, Pa. 17033.**

**RESEARCH SCIENTIST** sought by the Department of Nutrition and Food Science of the Massachusetts Institute of Technology (MIT). Will participate in research in the Neuropharmacology Laboratory by joining ongoing studies into drug action on membrane ion channels and their control. Involves intracellular (including voltage clamp) and patch clamp recording from mammalian neurons of the central and enteric nervous systems.

Candidates should have M.A. and/or Ph.D. degrees, plus extensive postdoctoral experience with intracellular recording from mammalian neurons, gland cells, and smooth muscle. Strong publications record essential.

Please submit two copies of résumé (attention: Job Number R1108) to: **Dr. Alan North, c/o Vera J. Ballard, MIT Personnel Office, E19-239, 77 Massachusetts Avenue, Cambridge, Mass. 02139.** *MIT is an Equal Opportunity/Affirmative Action Employer.*

## RIA CHEMIST

Sigma Chemical Company is conducting a search for an **immunochemist/organic chemist** to develop anti-hapten antisera. The successful candidate will have demonstrated expertise in the area of hapten-carrier conjugation, anti-hapten antisera production, and characterization of antisera using RIA methodology.

This position represents a challenging opportunity within our rapidly expanding Immunochemicals Department for the qualified chemist to develop antisera to drugs, peptides, and hormones. References will not be contacted without prior approval. Please submit résumé to:

**Ron Wolfe, Ph.D.  
Immunochemicals Department  
SIGMA CHEMICAL  
COMPANY  
P.O. Box 14508  
St. Louis, Mo. 63178**

*Equal Opportunity Employer, M/F*

## DIRECTOR, CELLULAR DIAGNOSTICS DEVELOPMENT

Miles Scientific is seeking an outstanding Senior Scientist to provide for the overall direction of its new cellular diagnostics development program. This challenging, newly created position will report to the Division President and will be located in Naperville, Illinois, an attractive suburb of Chicago.

Qualified candidates will have a Ph.D. in the Biological Sciences or Biochemistry with a thorough working knowledge and understanding of cellular diagnostics with emphasis on histology, cytology, hematology and immunochemistry. Experience in monoclonal antibodies, cell receptors, sub-cellular organelles and cell sorting is a plus. Proven administrative, interpersonal and communication skills are essential as well as demonstrated supervisory ability.

We offer an excellent salary and benefits package including relocation assistance. Please send resume including salary requirements in confidence to:

**Personnel Manager**

**MILES SCIENTIFIC**  
Div. Miles Laboratories, Inc.

30 W 475 N. Aurora Road  
Naperville, Illinois 60566

*An Equal Opportunity Employer M/F/H*



## Microbiologist

Hoechst-Roussel Pharmaceuticals, Incorporated, fast growing subsidiary of American Hoechst, a Fortune 250 chemical/pharmaceutical company, has an opening in its Quality Assurance Department for a Microbiologist.

Responsibilities for this position include: planning, developing and directing programs in microbiological testing of raw materials, and sterile and non-sterile finished products. Candidate will contribute to the validation and control of pharmaceutical sterile manufacturing processes and in microbiological environmental monitoring.

The individual we seek must possess 3-5 years experience in the aforementioned areas with a pharma-

ceutical company as well as supervisory background. MS or PhD in Microbiology is also required.

Position located at our modern corporate complex in pleasant suburban setting provides excellent salary and full-paid benefits. Please submit resume with salary history and requirement, in confidence, to:

Paula Fallon  
American Hoechst  
Corporation  
202-206 North  
Somerville, NJ 08876

*An affirmative action  
employer M/F/H*

**Hoechst**



## INFORMATION SYSTEMS RESEARCH & DEVELOPMENT

**OAK RIDGE NATIONAL LABORATORY** is developing a center of excellence in information systems research and development and is seeking individuals with career interests in basic and applied research on issues related to the implementation of new information and communication technologies, including both hardware and software.

Candidates should have a Ph.D. or an M.S. degree in such fields as operations research, management sciences, information sciences, evaluation research, artificial intelligence, or applied computer science and should have strong research credentials. They should be interested in contributing both to the advancement of knowledge and to meeting the needs of organizations which seek to make effective use of these new technologies. Abundant opportunities exist for interaction and collaboration with other **oml** scientists and with colleagues in universities, industry, and public agencies. Appointments at all levels will be considered.

**oml** offers an excellent salary and benefits package and a generous relocation program plus a stimulating working environment and superb facilities. The Oak Ridge National Laboratory is operated by Union Carbide Corporation for the U.S. Department of Energy. U.S. citizenship is required. For immediate consideration, qualified individuals should forward resume, three letters of recommendation, academic transcripts, and salary history to:

**Mr. J. T. Atherton**  
Technical Employment Manager  
**OAK RIDGE NATIONAL LABORATORY**  
P.O. Box X  
Oak Ridge, Tennessee 37830  
(615) 574-4433

*An Equal Opportunity Employer*

## Research Chemist

### IMMUNOASSAY R&D

Mallinckrodt, Inc. has an immediate opening for a research chemist in the Immunoassay Dept. of Medical Products R&D. Responsibilities include the research and development of immunoassays for the direct detection of clinically important antigens.

Qualifications include a Ph.D. in Immunology, Microbiology or related field and 2 or more years of post doctoral experience. Also required is experience with advanced methods of immunologic analyses, including non-radio-metric assays, as well as a working knowledge of protein conjugation methods including use of bi-functional coupling agents. Preference will be given to candidates with 1 to 2 years of industrial experience.

This position provides a stimulating working environment and a very competitive salary, benefits and relocation program.

Qualified candidates should send resume, pertinent reprints and salary requirements to:  
Sara E. Hamlin, Human Resources Manager

**Mallinckrodt**

675 McDonnell Blvd., P.O. Box 5840  
St. Louis, Missouri 63134  
*An equal opportunity employer, M/F*

## RESEARCH BIOCHEMIST

International Minerals and Chemical Corporation, a leading supplier to Agriculture, Industrial, and Chemical markets worldwide is presently seeking additional aggressive personnel in their Research & Development Center.

The candidate should have a Ph.D. in biochemistry and experience in the following areas:

1. Protein purification and protein chemistry.
2. Meat animal endocrinology, metabolism and/or physiology. Exceptional candidates with experience with other animal models will be considered.

Experience in immunochemistry, molecular biology or cell culture would be useful. The successful candidate will interact with scientists from several other research areas in projects relating to the development of new animal products.

The position represents an outstanding opportunity for a scientist with the above qualifications to join an aggressive and dynamic team. In addition to an excellent salary, commensurate with your experience, this position includes an outstanding fringe benefit package including relocation assistance, life, health, and dental insurance.

Individuals interested in a challenging position conducting original and applied research should submit in confidence a description of their research experiences, publications and training along with references to:



M. G. Ray  
International Minerals &  
Chemical Corporation  
P.O. Box 207  
Terre Haute, IN 47808

An Equal Opportunity/  
Affirmative Action Employer

## CHAIRPERSON Pharmacology

The Albert Einstein College of Medicine of Yeshiva University seeks a Chairperson for the Department of Molecular Pharmacology. Individuals with a strong commitment and record of research accomplishment are invited to reply. The selected Chairperson will become a tenured professor with the availability of space and resources to continue and expand a high-quality department. Applications from women and minorities are especially invited. Interested candidates are requested to send C.V.'s to: Norman Fleischer, MD, Professor of Medicine, Chairman of Search Committee for Molecular Pharmacology.

### The Albert Einstein College of Medicine

1300 Morris Park Avenue  
Bronx, New York 10461

an equal opportunity employer

## POSITIONS OPEN

**RESEARCH ASSOCIATE** for the Department of Nutrition and Food Science of the Massachusetts Institute of Technology (MIT). Will supervise and carry out research on the relationships between neurotransmissions and the turnover of membrane phospholipids. Particular emphasis on elucidating the metabolic relationships between syntheses of phosphatidylcholine and acetylcholine, and the transduction of signals across membranes.

Requires Ph.D. in neurochemistry or neuroendocrine regulations, plus extensive practical knowledge of cell culture techniques, transmission and scanning electron microscopy, gas chromatography, radioenzymatic assays, receptor binding, and radioimmunoassay. Formal training in nutrition, metabolism, and neuropharmacology essential. Record of productivity in neuroscience must be available in form of senior-authored publications. Salary: \$22,000 per annum.

Please submit two copies of résumé (attention: Job Number R1105) to: **Dr. Richard Wurtman, c/o Vera J. Ballard, MIT Personnel Office, E19-239, 77 Massachusetts Avenue, Cambridge, Mass. 02139. MIT is an Equal Opportunity/Affirmative Action Employer.**

### CORNELL UNIVERSITY RESEARCH ASSOCIATE POSITION

**Qualifications:** Doctorate or equivalent training in biochemistry, nutritional biochemistry, pharmacology, or toxicology. Evidence of research ability as indicated by publications in the scientific literature.

**Responsibilities:** The basic function will be to design, conduct, and report original research concerning the biochemical mechanism(s) for the interaction of selenium with pro-oxidant drugs and to participate in the general research effort of a laboratory involved in basic studies of the nutritional biochemistry of selenium, vitamin E, and related nutrients.

The specific responsibilities will include planning and conducting in vitro and in vivo experiments; developing and testing research methods; directing the activities of support personnel in the conduct of the research; assisting in the supervision of the operations of a research laboratory; providing advice in matters of laboratory operations, budget, and personnel; and participating in seminars and scientific meetings.

The research associate will work in cooperation with and under the direction of: **Dr. G. F. Combs, Jr., Associate Professor of Nutrition.** Interested individuals send curriculum vitae and two letters of recommendation to: **Dr. Combs, 306 Rice Hall, Cornell University, Ithaca, N.Y. 14853.**

*Cornell University is an Equal Opportunity/Affirmative Action Employer. Minorities, women and the handicapped are encouraged to apply.*

Application deadline: 22 August 1983. Position available 15 September 1983.

Marine Sciences Research Laboratory at Memorial University of Newfoundland invites applications for the position of **RESEARCH SCIENTIST**. Preference given to a **plant molecular biologist** with research experience relevant to biotechnology. Example: genome modification using blue-green algae. Applicants must be anxious to establish a vigorous, independent research program which should utilize the excellent water facilities. Research scientists at the Marine Sciences Research Laboratory enjoy the privileges of an academic appointment. The laboratory is located 3 miles from St. John's and is a modern, well-equipped laboratory. Salary commensurate with qualifications and experience. Please respond with research proposal, a biographical sketch, list of publications, and three references by 22 August 1983 to: **Dr. D. R. Idler, Director, Marine Sciences Research Laboratory, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1C 5S7.**

**RESEARCH SCIENTIST or POSTDOCTORAL POSITION** now available for research in the pathophysiology of electrolyte transport mechanisms in cystic fibrosis. Background and experience in epithelial transport, electrophysiology of cells, cell biology, or tissue culture is required. Studies are designed to apply basic science techniques in defining a basic defect in fluid and electrolyte transport in affected human tissues (see: *N.E.J.* 308, 1185, 1983). Position and salary commensurate with qualifications. Please contact:

**Paul M. Quinton, Ph.D.**  
Associate Professor of Biomedical Sciences  
University of California, Riverside  
Riverside, Calif. 92521

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## Pulmonary Physiologist/ Pharmacologist

The Lovelace Inhalation Toxicology Research Institute is seeking a Physiologist or Pharmacologist with a strong interest in pulmonary pathophysiology to join a multi-disciplinary team conducting comparative studies of the effects of inhaled toxic materials.

The applicant should have experience in studying health effects in intact animals. A clinical background (veterinary or medical) is desirable. The applicant should have good oral and written communication skills and demonstrate ability to design, conduct and report independent research. The successful applicant will conduct basic and applied research, both independently and in collaboration with other scientists. Salary and starting date are negotiable.

The Institute has a strong multi-disciplinary research team of physical, biophysical and biomedical scientists oriented towards comparative animal research involving varied health effects endpoints. The Institute addresses significant societal problems concerning airborne materials inhaled by man with emphasis on those related to energy technologies. Interests include dose-response relationships of short and long-term effects, mechanisms of lung injury, animal models of human lung disease and functional/structural/biochemical correlations.

Submit curriculum vitae and summary of research interests to:

Personnel Unit  
Lovelace Inhalation Toxicology Research Institute  
P.O. Box 5890  
Albuquerque, NM 87185  
(505) 844-9431

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Genentech, Inc., a company at the forefront of recombinant DNA technology, is presently seeking individuals to help us meet the challenges which the decade will bring. At this time we have need for the following individuals:

## Quality Control Scientist

This position in our Quality Control Department will be responsible for developing state-of-the-art techniques in HPLC methods such as reverse phase peptide mapping and size exclusion chromatography in order to support government submissions. The successful candidate will have an MS or PhD in Chemistry or Biochemistry plus a minimum of 3-5 years experience in HPLC methods development, preferably in a pharmaceutical industry or post doctoral studies. A knowledge of peptide chromatography, proteolytic and chemical methods of protein digestion, and native sizing column methods is required. **Position SCI-315**.

## Sr. Quality Control Chemist

This position will supervise the Quality Control Chemistry Lab which performs raw materials and finished products testing. The position requires benchwork in addition to supervisory responsibilities. Emphasis on protein products chemical analysis utilizing wet chemistry and instrumental techniques. Experience in AA, IR, UV and HPLC instrumentation a must. A minimum of a BS in Chemistry is required and 5 years in a pharmaceutical Q.C. lab is preferred. **Position SCI-166**.

## Quality Control Microbiologist

Our Quality Control Department is seeking an individual with a minimum 3 years experience in a pharmaceutical quality control environment. Applicants must have knowledge of aseptic filling techniques, sterility testing, environmental monitoring, and mycoplasma determination in cell culture. This position also requires the ability to prepare protocols for validation studies. Molecular Biology experience utilizing techniques such as restriction enzyme mapping, growth rate studies and sequencing of genes and promoters would be a plus. **Position SCI-314**.

We offer excellent salaries and benefits, as well as a stimulating and challenging work environment and a liberal relocation program. For immediate consideration please send your curriculum vitae and the names of three references to **Human Resources**, referring to **appropriate position number**.

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## POSITIONS OPEN

**RESEARCH ASSISTANT PROFESSOR.** Individual to conduct research on mechanisms of drug effects on excitability of gastrointestinal smooth muscles. Applicants must have at least 2 years of research experience with various electrophysiological techniques after receiving Ph.D. Applicants should send curriculum vitae and list of three references by 20 August 1983 to: **Jackie D. Wood, Ph.D., Department of Physiology, University of Nevada School of Medicine, Reno, Nev. 89557, Affirmative Action/Equal Opportunity Employer.**

The Smithsonian Institution, an *Equal Opportunity Employer*, seeks a **RESEARCH SCIENTIST/CURATOR** to direct a program in hominid origins. Laboratory and field experience, familiarity with existing fossil record, and strong theoretical background highly desired. Must be capable of participating in and/or organizing interdisciplinary field expeditions and interpreting results. Position is located in the Department of Anthropology, National Museum of Natural History/Museum of Man, Smithsonian Institution, Washington, D.C. 20560. Send completed SF-171, Personal Qualifications Statement, and curriculum vitae to: **Office of Personnel Administration, Arts & Industries Building, Room 1410, attention: MPA 83-310-F.** Closing date for applications is 5 September 1983.

**RESEARCH SPECIALIST/ELECTRON MICROSCOPE ENGINEER** position now available at the Madison High Voltage Electron Microscope Facility for an individual with a B.S. degree and several years of practical experience maintaining and improving electron optical equipment. An individual with a Ph.D. could be considered for an assistant scientist position. Applicant would be expected to maintain 1 MeV electron microscope, assist outside users in its use, and assist the staff in high resolution studies of biological samples.

Salary: \$22,000 to \$33,000. Send curriculum vitae and three references to: **Professor Hans Ris, Room 319 Zoology Research, 1117 West Johnson Street, University of Wisconsin-Madison, Madison, Wis. 53706,** by 1 October 1983.

A challenging opportunity to join an active group involved in the development of novel electron-optical instrumentation and techniques. *The University of Wisconsin-Madison is an Equal Opportunity Employer.*

**TECHNICAL ASSOCIATE:** Center for Cancer Research of the Massachusetts Institute of Technology (MIT). Experienced laboratory technician to perform laboratory research on all aspects of recombinant DNA genetic engineering involves preparation of DNA and RNA from culture cells, organ, embryo, and tumors; preparation of plasmid and phage DNA; isolation of specific probes and screening of phage and plasmid libraries using plaque and colony hybridization; isolation, analysis, and construction of recombinant clones; DNA sequencing of Maxam-Gilbert technique. Other related techniques to be used such as various kinds of agarose and acrylamide gel electrophoresis; Southern and Northern hybridization; tissue culture techniques, including the passage of cell lines; hybridomas, preparation of cell cultures from organs; and DNA transfection into culture cells using protoplast fusion techniques. Applicants should have B.S. in biology or equivalent degree, plus minimum of 7 to 10 years of relevant experience. Salary range: \$19,000 to \$20,500.

Please submit two copies of résumé (attention: Job Number R1106) to: **Vera J. Ballard, MIT Personnel Office, E19-239, 77 Massachusetts Avenue, Cambridge, Mass. 02139.** MIT is an *Equal Opportunity/Affirmative Action Employer* and particularly welcomes applications from minority group members and women.

## TOXICOLOGIST

A Southeastern manufacturer has an entry-level position for a toxicologist at its R & D Center located in the Piedmont section of North Carolina. The position primarily involves the monitoring of studies which are being conducted on a contract basis. Additionally, supervision of limited in-house experimentation will be involved.

The position requires a Ph.D. in toxicology or related discipline. Excellent written and verbal communication skills are also essential. Excellent salary, benefit package, and moving expenses are provided. *Equal Opportunity Employer.* Interested candidates should send a detailed résumé, including salary requirements, in confidence, to: **Box 195, SCIENCE.**

## SYMPOSIA

### SYMPOSIUM

#### NEW APPROACHES IN TOXICITY TESTING AND THEIR APPLICATION TO HUMAN RISK ASSESSMENT

14 and 15 September 1983, St. Louis

Symposium presentations and posters will address recent developments in genetic toxicology, metabolism, pharmacokinetics, reproduction, immunotoxicology, environmental distribution and fate, dose response models, and epidemiologic methods and their application to human risk.

The symposium is sponsored by: **The Monsanto Company, Environmental Health Laboratory, Department of Medicine and Environmental Health, 645 South Newstead Avenue, St. Louis, Mo. 63110.**

#### SAFETY ASSESSMENT: THE INTERFACE BETWEEN SCIENCE, LAW AND REGULATION

12 to 14 September 1983  
Washington, D.C.

Sponsored by the INTERNATIONAL LIFE SCIENCES INSTITUTE (ILSI). Symposium will address: Major policy issues regarding safety assessment, the adequacy of current laws, and strategies for managing problems related to technological advances. Participants will include: Dr. Ian Munro, Canadian Health Protection Branch, Dr. Harold Grice, ILSI, Dr. Sanford Miller, U.S. Food and Drug Administration.

For complete program brochure and registration information, contact:

**ILSI**

Mary Rita Prah, Administrator  
International Life Sciences Institute  
900 17th Street, NW, Suite 600  
Washington, D.C. 20006  
Telephone: 202-659-0074

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIPS.** Two positions available immediately for individuals with Ph.D. for a program in molecular parasitology. Experience in molecular biology and cloning is essential for one position and in protein chemistry and immunochromatography for the other. Send curriculum vitae and names of three references to: **Dr. Adel Mahmoud or Dr. Bruce M. Greene, Department of Medicine, Case Western Reserve University, University Hospitals, 2074 Abington Road, Cleveland, Ohio 44106.**

**BIOLOGY LABORATORY EDUCATION—Fellowship.** 1-year renewable; \$16,000; Ph.D. or M.S. Working with faculty, to coordinate undergraduate laboratories: preparing materials, supervising staff and TA's, developing new exercises. Send letter describing teaching interests, curriculum vitae, and names of three references by 5 August 1983 to: **Dr. J. A. Lippincott, Associate Dean—Biological Sciences, Northwestern University, Evanston, Ill. 60201.** An *Equal Opportunity/Affirmative Action Employer.*

#### POSTDOCTORAL FELLOWSHIPS FOR RESEARCH IN NEUROPLASTICITY AND REGENERATION

Positions are available after July 1983 for interdisciplinary studies in neuroplasticity and regeneration with a group of investigators in the Departments of Neurosurgery, Neurology, and Otolaryngology in the Clinical Neuroscience Research Center of the University of Virginia. Current research interests of the participating faculty focus on the neural mechanisms involved in CNS injury and neurological and neuromuscular disorders. Participating faculty include J. E. Greenlee, L. Holner, J. A. Jane, Y. J. Kim, J. J. Lenn, W. B. Levy, E. W. Rubel, and O. Steward. Applicants should hold either the Ph.D. or the M.D. degree, and should be committed to a career involving research. We are particularly interested in clinically trained individuals with a commitment to basic research. Inquiries should be directed to:

Oswald Steward, Ph.D., or  
John A. Jane, M.D., Ph.D.  
Neuroplasticity and Regenerating Training Program  
Department of Neurosurgery  
University of Virginia School of Medicine  
Charlottesville, Va. 22908

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

## FELLOWSHIPS

#### POSTDOCTORAL FELLOWSHIP IN MUSCLE BIOPHYSICS

Postdoctoral fellowship available to study mechanical properties of isolated single striated muscle fibers using rapid stretch and release device and laser diffraction techniques. Applicant should have experience in preparing single muscle fibers for mechanical studies. Send curriculum vitae to: **Dr. R. J. Baskin, Department of Zoology, University of California, Davis, Calif. 95616.** An *Equal Opportunity Employer.*

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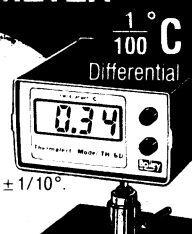
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The new reusable Nalgene Filter Holders are available with either a receiver, for filtering up to 250 mL, or with a funnel, for use with manifolds. They combine all the performance and convenience features you want in a single membrane filtration system.

#### EXCLUSIVE: TWO MEMBRANE SUPPORT PLATES

Each Nalgene Holder is supplied with a sterilization plate for fast flow-through, **and** an analysis plate, to maintain the perfectly flat membrane needed for analytical work.

#### INTERCHANGEABLE UPPER CHAMBER

Upper chamber can be used with either receiver or funnel. For economical conversion of Holder and Receiver to a filter funnel, ask for the Nalgene Funnel Conversion Assembly.

#### TOUGH POLYSULFONE CONSTRUCTION

Nalgene Filter Holders are made of trans-

parent polysulfone, the rugged plastic that withstands far more cycles in the autoclave than units made of polycarbonate.

#### EASY TO USE

Holders are designed to be simple to use for **either** vacuum or pressure filtration.

#### LOCKING RING COUPLING SYSTEM

Forms a tight seal between upper and lower chamber without twisting or damaging the membrane.

#### AVAILABLE FROM LAB SUPPLY DEALERS EVERYWHERE

Ask for the Nalgene Filter Holder with Receiver (Cat. No. 300-4000) or Filter Holder with Funnel (Cat. No. 310-4000).

For more information, write or call us: Nalgene Labware Department, Nalge Company, Box 365, Rochester, New York 14602. Telephone (716) 586-8800; Telex 97-8242.



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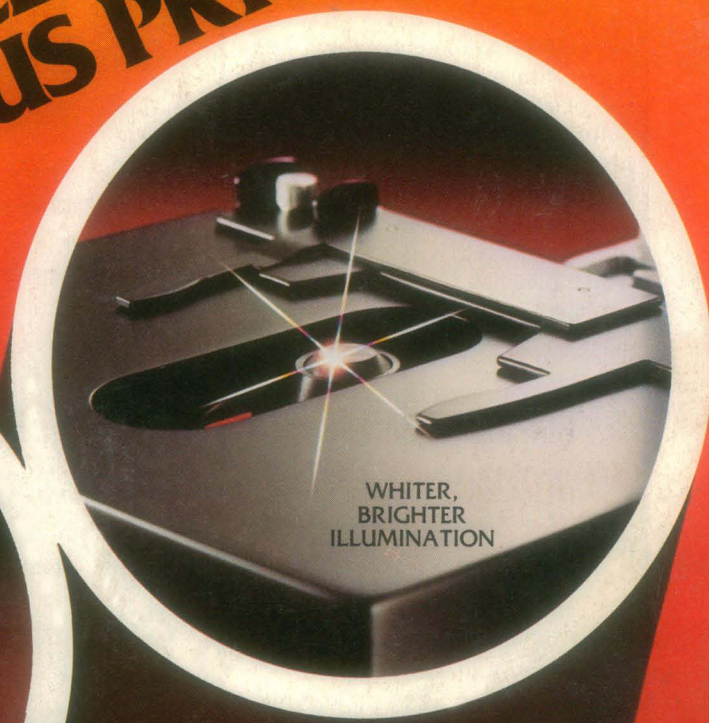
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