

valuable contributions being made by bat ecologists at the present time. Namely, they are beginning to use the extraordinary ecological diversity of bats to test current hypotheses about the evolution of morphology, physiology, and behavior. Even if bat ecology remains primarily descriptive, this vast interspecific and intraspecific variation provides raw material for powerful comparative studies. This volume will have achieved its primary objective if it helps communicate that fact to researchers both inside and outside the field.

DOUGLAS W. MORRISON
Department of Zoology and
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Development of a Coral Reef

The Geomorphology of the Great Barrier Reef. Quaternary Development of Coral Reefs. DAVID HOPLEY. Wiley-Interscience, New York, 1982. xvi, 454 pp., illus. \$59.95.

Captain Cook's ship, the H.M.S. *Endeavour*, ran aground on the Australian Great Barrier Reef late one night in 1770. So entered this, the greatest of all coral reefs, into the annals of science. This and other bits of information make David Hopley's book interesting as historical reading, as well as valuable as a statement about coral reefs in general and this very large coral reef province in particular.

Most students of coral reefs realize that "Great Barrier Reef" is a misnomer referring not to a single reef but rather to an entire province containing at least 2500 coral reefs and covering more than 200,000 square kilometers (somewhat more than a third of the estimated reef area of the entire globe). The climatic, oceanographic, geological, and biological diversity of these reefs is considerable, so a description of the Great Barrier Reef is a fair start at a description of the characteristics of the coral reefs of the world.

Four of the 13 chapters plus miscellaneous other information scattered throughout the book might be described as geomorphological, classifying coral reefs or parts thereof. Another chapter might be described as physical geography, dealing with environmental factors that influence reef development in the Great Barrier Reef province. The remainder of the book is very much directed toward the processes that contribute to the formation of coral reefs. Three

chapters review our present knowledge about biological, physical, and chemical processes acting on coral reefs. I was mildly disappointed that the chapter on chemical processes is restricted to diagenesis, although in all fairness other aspects of chemical processes on reefs receive attention elsewhere in the book. Despite a few weaknesses of this sort, these chapters provide an excellent summary of our knowledge (up to about 1978, although there are a few more recent citations).

Three chapters contain the core of Hopley's original scientific contribution in this book, drawing heavily on his own research in the Great Barrier Reef over the past 15 years. These chapters deal with the Holocene flooding of preexisting limestone platforms and the accumulation of Holocene reef material on these platforms. Hopley specifically considers the so-called antecedent karst hypothesis: "The essence of the problem of reef morphology is the extent to which it is karst-induced as opposed to growth-determined." Hopley considers direct evidence from the Great Barrier Reef, analogy with karst topography elsewhere, small-scale experimental data, and the diverse opinions on this topic. He concludes that, though small-scale features related to underlying karst topography are clearly in evidence, "more influential in providing the relief of both the pre-Holocene foundation and the Holocene morphology is the pattern of growth during submergence that will favor the colonization of prominences at the expense of depressions."

This general conclusion is then synthesized with data on sea level over the past 125,000 years and with estimates of CaCO_3 sediment production in various reef zones to construct a generalized model of Holocene reef growth and erosion toward the observed morphology. Hopley has clearly not had the last say in the debate on reef growth and morphology in the Great Barrier Reef, but he has provided a lucid and carefully considered view for further discussion.

The last comprehensive geomorphological look at the Great Barrier Reef province was W. G. H. Maxwell's *Atlas of the Great Barrier Reef* (1968). Increasing access to the reef and a variety of environmental and political considerations have contributed enormously to our knowledge of it since that time, so a successor to Maxwell's book was in order. Hopley's contribution is a worthy successor.

STEPHEN V. SMITH
Hawaii Institute of Marine Biology,
Kaneohe, Hawaii 96744

Books Received

Absent-Minded? The Psychology of Mental Lapses and Everyday Errors. James Reason and Klara Mycielska. Prentice-Hall, Englewood Cliffs, N.J., 1982. x, 264 pp., illus. Cloth, \$13.95; paper, \$6.95.

Activated Prothrombin Complex Concentrates. Managing Hemophilia with Factor VIII Inhibitor. Papers from a meeting, Rome, Mar. 1981. G. Mariani, M. A. Russo, and F. Mandelli, Eds. Praeger, New York, 1982. xviii, 240 pp., illus. \$34.50.

Children's Language. Vol. 3. Keith E. Nelson, Ed. Erlbaum, Hillsdale, N.J., 1982. xviii, 506 pp. \$49.95.

Clustering of Large Data Sets. Jure Zupan. Research Studies Press (Wiley), New York, 1982. xviii, 122 pp., illus. \$31.95.

Color and Color Vision. Selected Reprints. Paul L. Pease, Ed. American Association of Physics Teachers, Stony Brook, N.Y., 1982. iv, 130 pp., illus. Paper, \$4.

Communications and the Future. Prospects, Promises, and Problems. Howard F. Didsbury, Jr., Ed. World Future Society, Bethesda, Md., 1982. viii, 360 pp. Paper, \$14.50.

Consistency in Social Behavior. Papers from a symposium, Waterloo, Ontario, Canada, Oct. 1979. Mark P. Zanna, E. Tory Higgins, and C. Peter Herman, Eds. Erlbaum, Hillsdale, N.J., 1982. xiv, 314 pp. \$29.95. The Ontario Symposium, vol. 2.

Control Science and Technology for the Progress of Society. Proceedings of a congress, Kyoto, Japan, Aug. 1981. H. Akashi, Ed. Published for the International Federation of Automatic Control by Pergamon, New York, 1982. Seven volumes. lxxxii, 2914 pp., illus., + appendixes. \$750.

Controlled Release Nitroglycerin in Buccal and Oral Form. Papers from a workshop, Kronberg, Sept. 1981. W.-D. Bussmann, R.-R. Dries, and W. Wagner, Eds. Karger, Basel, 1982. xii, 218 pp., illus. \$69.50. Advances in Pharmacotherapy, vol. 1.

Creation and Evolution. Hilary Cruz. Catholic Publications Bureau, Colombo, Sri Lanka, 1982. xiv, 82 pp., illus. Paper, Rs. 25.

Current Topics in Cellular Regulation. Vol. 21. Bernard L. Horecker and Earl R. Stadtman, Eds. Academic Press, New York, 1982. xii, 316 pp., illus. \$43.

Desertification. A Bibliography with Regional Emphasis on Africa. Gunter Leng. Universitat Bremen, Bremen, Germany, 1982. xviii, 178 pp. Paper, DM 15. Bremer Beiträge zur Geographie und Raumplanung, Heft 4.

Electroanalytical Chemistry. Basic Principles and Applications. James A. Plambeck. Wiley-Interscience, New York, 1982. xxii, 404 pp., illus. \$35.

Electron Distributions and the Chemical Bond. Proceedings of a symposium, Atlanta, Mar. 1981. Philip Coppens and Michael B. Hall, Eds. Plenum, New York, 1982. x, 480 pp., illus. \$55.

Elements of Optical Coherence Theory. Arvind S. Marathay. Wiley, New York, 1928. xx, 316 pp., illus. \$39.95. Wiley Series in Pure and Applied Optics.

Ellie. A Child's Fight Against Leukemia. Jonathan B. Tucker. Holt, Rinehart and Winston, New York, 1982. xiv, 338 pp., illus. \$15.95.

Emotion and Early Interaction. Papers from a symposium. Tiffany Field and Alan Fogel, Eds. Erlbaum, Hillsdale, N.J., 1982. xvi, 300 pp., illus. \$29.95.

Encyclopedia of Statistical Sciences. Vol. 2, Classification to Eye Estimate. Samuel Kotz, Norman L. Johnson, and Campbell B. Read, Eds. Wiley-Interscience, New York, 1982. x, 614 pp., illus. \$75.

Endorphins and Opiate Antagonists in Psychiatric Research. Clinical Implications. Nandkumar S. Shah and Alexander G. Donald, Eds. Plenum, New York, 1982. xxii, 488 pp., illus. \$39.50.

Endotoxins and Their Detection with the Limulus Amebocyte Lysate Test. Proceeding of a conference, Woods Hole, Mass., Sept. 1981. Stanley W. Watson, Jack Levin, and Thomas J. Novitsky, Eds. Liss, New York, 1982. xx, 420 pp., illus. \$44. Progress in Clinical and Biological Research, vol. 93.

Energy in Perspective. Jerry B. Marion and Marvin L. Roush. Academic Press, New York, ed. 2, 1982. xiv, 204 pp., illus. Paper, \$9.75.

Ergodic Theory and Dynamical Systems II. Proceedings, Special Year, Maryland 1979-80. A. Katok, Ed. Birkhäuser, Boston, 1982. xii, 214 pp., illus. \$15. Progress in Mathematics, vol. 21.

Essentials of COBOL Programming. A Structured Approach. Gerald N. Pitts and Barry L. Bateman. Computer Science Press, Rockville, Md., 1982. x, 146 pp., illus. Paper, \$14.95.

Essentials of Nuclear Chemistry. Hari Jeevan Arnikar. Halsted (Wiley), New York, 1982. xii, 336 pp., illus. \$17.95.

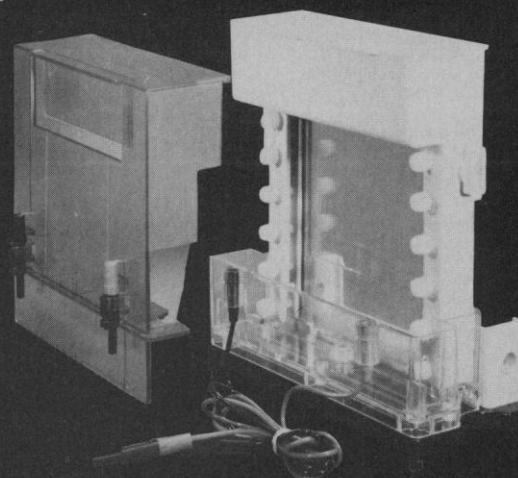
Immunity and Concomitant Immunity in Infectious Diseases. Paul Kallós, Ed. Karger, Basel, 1982. xvi, (Continued on page 1000)

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Applications Invited

The American Association for the Advancement of Science (AAAS) invites applications for six environmental science and engineering fellowships available for the summer of 1983. Postdoctoral to midcareer scientists, engineers, and other appropriate professionals are encouraged to apply. *The deadline for applications is 31 March 1983.* The 10-week appointment begins approximately 13 June 1983 and lasts until approximately 19 August 1983. The awards will be announced prior to the end of April 1983.

The persons selected will work closely with the Environmental Protection Agency's Strategic and Scientific Assessment Staff (SSAS) and assist it in identifying and assessing the significance of long-range environmental problems and opportunities. The award consists of a taxable stipend of \$550 per week and a nominal additional amount for temporary relocation expenses and travel in connection with the fellowship.

Each awardee will undertake a focused, future-oriented research project of mutual interest to the Fellow and one of EPA's research or program offices and prepare a report at the completion of the summer's work. The selection of projects and research approach will be designed to meet the purpose of the program stated above as well as to fit the individual Fellow's professional goals. Broad areas of research interest within EPA include environmental risk assessment, biological pesticides, acid deposition, mobile source air pollution; oxidants, gases, and particles; hazardous municipal wastewater and spills; drinking water; solid hazardous waste; chemical testing and assessment; pesticides; radiation; and energy.

Candidates are expected to be postdoctoral to midcareer professionals, to be critical thinkers, articulate, adaptable, and able to work with a variety of people from different professional backgrounds. Persons may apply from any physical, biological, or behavioral science or any field of engineering or any other relevant professional field.

Persons interested in further information and details on selection criteria and requirements should contact **Patricia S. Curlin, Environmental Science and Engineering Fellowship Program, American Association for the Advancement of Science, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036; telephone: 202-467-4310.**

BOOKS RECEIVED

(Continued from page 962)

364 pp., illus. \$118.75. Progress in Allergy, vol. 31. **Immunization of Adult Birds with Inactivated Oil Adjuvant Vaccines.** Proceedings of a symposium, Lyon, France, June 1981. Karger, Basel, 1982. x, 334 pp., illus. Paper, \$51. Developments in Biological Standardization, vol. 51.

Immunobiology of Infection with Herpes Simplex Virus. Holger Kirchner. Karger, Basel, 1982. viii, 104 pp. \$39. Monographs in Virology, vol. 13.

Industrial Heat Exchangers. A Basic Guide. G. Walker. Hemisphere, Washington, D.C., and McGraw-Hill, New York, 1982. viii, 408 pp., illus. \$41.50.

Inorganic Chemistry. C. Chambers and A. K. Holliday. Butterworth, Boston, 1982. xii, 398 pp., illus. Paper, \$12.95. Butterworths Intermediate Chemistry. Revision of *Modern Inorganic Chemistry* (1975).

Inorganic Geochemistry. Paul Henderson. Pergamon, New York, 1982. xvi, 354 pp., illus. Cloth, \$42; paper, \$18.50.

Interacting Bosons in Nuclei. Proceedings of a school, Granada, Sept. 1981. J. S. Dehesa, J. M. G. Gomez, and J. Ross. Eds. Springer-Verlag, New York, 1982. vi, 210 pp., illus. Paper, \$12.50. Lecture Notes in Physics, vol. 161.

Intimacy. Martin Fisher and George Stricker. Eds. Plenum, New York, 1982. xvi, 472 pp. \$42.50.

Introduction to Nonlinear Laser Spectroscopy. Marc D. Levenson. Academic Press, New York, 1982. xiv, 256 pp., illus. \$29.50. Quantum Electronics.

The Inventions of Daedalus. A Compendium of Plausible Schemes. David E. H. Jones. Freeman, San Francisco, 1982. iv, 204 pp., illus. Cloth, \$18.95; paper, \$9.95.

Light and Color. R. Daniel Overheim and David L. Wagner. Wiley, New York, 1982. xii, 270 pp., illus., + plates. \$18.95.

Light Scattering in Solids III. Recent Results. M. Cardona and G. Güntherodt. Eds. Springer-Verlag, New York, 1982. xii, 282 pp., illus. \$44. Topics in Applied Physics, vol. 51.

Light Transmission Optics. Dietrich Marcuse. Van Nostrand Reinhold, New York, ed. 2, 1982. x, 534 pp., illus. \$32.50. Van Nostrand Reinhold Electrical/Computer Science and Engineering Series.

Nutrition Education and Modern Concepts of Food Assimilation. Geoffrey H. Bourne. Ed. Karger, Basel, 1982. xii, 192 pp., illus. \$97.75. World Review of Nutrition and Dietetics, vol. 40.

Optimization over Time. Dynamic Programming and Stochastic Control. Vol. 1. Peter Whittle. Wiley, New York, 1982. xii, 320 pp. \$46.95.

Organization and Representation in Perception. Papers from a conference, Abano, Italy, June 1979. Jacob Beck. Ed. Erlbaum, Hillsdale, N.J., 1982. xii, 388 pp., illus. \$39.95.

OSHA and the Politics of Health Regulation. David P. McCaffrey. Plenum, New York, 1982. xviii, 192 pp. \$24.50. Environment, Development, and Public Policy.

Oxidation in Organic Chemistry. Part D. Walter S. Trahanovsky. Ed. Academic Press, New York, 1982. xiv, 362 pp., illus. \$74. Organic Chemistry, vol. 5.

Pathophysiology of Renal Disease. Papers from a symposium. Heidelberg, Aug. 1982. E. Ritz and S. G. Massry. Eds. Karger, Basel, 1982. viii, 274 pp., illus. Paper, \$94. Contributions to Nephrology, vol. 33.

Patriarchy as a Conceptual Trap. Elizabeth Dodson Gray. Roundtable Press, Wellesley, Mass., 1982. 142 pp., illus. Paper, \$7.95.

Pedology. Pedogenesis and Classification. P. Duchaufour. Translated from the French edition (Paris, 1977) T. R. Paton. Allen and Unwin, Boston, 1982. xiv, 448 pp., illus. Cloth, \$50; paper, \$24.95.

Periods of Hilbert Modular Surfaces. Takayuki Oda. Birkhäuser, Boston, 1982. xvi, 128 pp. \$10. Progress in Mathematics, vol. 19.

Perspectives on Mental Representation. Experimental and Theoretical Studies of Cognitive Processes and Capacities. Papers from a conference, Jacques Mehler, Susana Franck, Edward C. T. Walker, and Merrill Garrett. Eds. Erlbaum, Hillsdale, N.J., 1982. xvi, 486 pp. \$39.95.

Philosophical Writings of Etienne Bannot, Abbé de Condillac. Translated from the French by Franklin Philip with the collaboration of Harlan Lane. Erlbaum, Hillsdale, N.J., 1982. xvi, 422 pp. \$36.

Spacewar. David Ritchie. Atheneum, New York, 1982. xii, 226 pp., illus. \$14.95.

A World on Paper. Studies on the Second Scientific Revolution. Enrico Bellone. Translated from the Italian edition (Milan, 1976) by Mirella and Riccardo Giacconi. MIT Press, Cambridge, Mass., 1982. xvi, 220 pp., Paper, \$7.95. Reprint of the 1980 edition.

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Pathobiologist. Ph.D. 1981, trained in major areas of clinical laboratory, specialty in general clinical chemistry, research experience in enzymology and immunology. Seeking academic, service, research, or industrial position. Box 47, SCIENCE. X

Pathologist with research interests in aphaeresis therapy and the transfusion-dependent hemoglobinopathies available July 1983. Large metropolitan area preferred. Box 38, SCIENCE 2/25; 3/4

Ph.D. Pharmacologist and Pharmacist. Experienced in animal research, clinical investigations, research and grant administration, writing, pharmacy. Box 48, SCIENCE. X

Physiologist. Ph.D.; 1½ years of postdoctoral training in renal biochemistry and endocrinology. Thesis research on regulation of phosphate by the kidney. Broad background in life sciences; diverse research interests, flexible. Publications. Teaching experience. Seeking industrial research or science administration position. Box 49, SCIENCE. X

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Mature Scientist desires partnership—employment possibility with small product, service-oriented fermentation, wastewater treatment company. Box 46, SCIENCE. 2/25; 3/4, 11

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Dr. S. D. Kung
Department of Biological Sciences
University of Maryland Baltimore County
Catonsville, Maryland 21228

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Tenure-track position as **ASSISTANT PROFESSOR AND PROGRAM LEADER OF WILDLIFE TECHNOLOGY PROGRAM** (four faculty, 100 students) effective 15 August 1983. Ph.D. in wildlife management or related field required. Administrative responsibilities involve academic affairs, public relations, and maintaining contact with other university programs and natural resource agencies. Teaching and advising undergraduate students in an associate degree program are principal academic duties. Courses include wildlife mensuration, aerial photo-interpretation, and animal handling. Experience in quantitative and computer applications desired. Research and publication required for tenure and promotion. Send résumé and three letters of recommendation by 1 March 1983 to: **Dr. Robert P. Brooks, Wildlife Technology Program, The Pennsylvania State University, The DuBois Campus, DuBois, Pa. 15801. Telephone: 814-371-2800. An Equal Opportunity/Affirmative Action Employer.**

ASSISTANT/ASSOCIATE PROFESSOR OF SOILS

The Department of Agronomy and Soils seeks a Ph.D. to teach undergraduate and graduate courses and to conduct a research program in soil classification and land use. Salary open; application review begins 1 April 1983. Submit résumé, statement of career interests, academic transcripts, and names of five personal/program evaluators to:

Dr. J. C. Engibous, Chairman
Department of Agronomy and Soils
Washington State University
Pullman, Wash. 99164-6420

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POSITIONS OPEN

ASSISTANT PROFESSOR

The Section of Biochemistry, Molecular and Cell Biology, Division of Biological Sciences, Cornell University, seeks applicants for a tenure-track assistant professorship in cell or molecular biology. Candidates who have demonstrated a high potential for research using molecular approaches to problems in the biology of plant or animal cells will be given preference. A Ph.D. degree is required, and the successful candidate probably will have several years of postdoctoral experience. Participation in teaching at the undergraduate and graduate level is an important part of the position. Send curriculum vitae and statement of research interests to: **Dr. Jeffrey W. Roberts, Chairman, Search Committee, Section of Biochemistry, Molecular and Cell Biology, Wing Hall, Cornell University, Ithaca, N.Y. 14853.** Arrange to have three letters of reference sent to this address as well. The closing date for applications is 5 April 1983. *Cornell University is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR—ENTOMOLOGY. The Department of Biological and Environmental Sciences, McNeese State University, invites applications for a tenure-track position in the general area of entomology to begin August 1983. Applicants must have a Ph.D.; a strong commitment to research and teaching at both graduate and undergraduate levels is essential. Send résumé and summary of research plans by 21 March 1983 to: **Dr. Hugh M. Turner, Chairman, Entomology Search Committee, Department of Biological and Environmental Sciences, McNeese State University, Lake Charles, La. 70609.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/ASSOCIATE PROFESSOR OF MEDICINE: CANCER RESEARCH. The Division of Oncology at University of Massachusetts Medical School is seeking a Board-certified (qualified) oncologist with demonstrated interest, expertise, and productivity in laboratory research, preferably in non-hematologic areas. The successful candidate should have strong skills in cellular/molecular oncology, as well as the ability to conduct independent research. Integration with divisional research activities would be desirable. Salary, fringes are competitive and commensurate with experience. Send curriculum vitae and references to: **Dr. Mary E. Costanza, Director, Division of Oncology, University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, Mass. 01605.** *An Affirmative Action/Equal Opportunity Employer.*

BIOLOGY

Assistant or associate professor. Ph.D. required, full-time, fall 1983. Person should have ability to teach undergraduate physiology, zoology, genetics, evolution, with a strong commitment to teaching. Person should have an interest in developing a research program for undergraduate research. Preference will be given to person with a minimum of 5 years of college level teaching experience. Applicants should send curriculum vitae, transcripts, and three professional references to: **Dr. Andre Cote, Dean of Arts and Sciences, Barry University, Miami Shores, Florida 33161.** Closing date: 31 March 1983. *Affirmative Action/Equal Opportunity Employer.*

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Applications are invited for four faculty positions effective August 1983. A developing Master's Program in Biomedical Sciences requires Ph.D. faculty with a strong commitment toward excellence in teaching. Responsibilities include teaching lecture and laboratory (where appropriate), and advising and counseling students.

Rank and salary open.

Candidates should send detailed curriculum vitae, transcripts, and three letters of reference by 31 March 1983 to: **Dr. Andre Cote, Dean of Arts and Sciences, Barry University, Miami Shores, Fla. 33161.**

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Three full-time laboratory instructors with responsibilities for laboratory instruction in at least two of the above areas. Requirements: master's degree and demonstrated teaching ability. Candidates should send detailed curriculum vitae, transcripts, and three letters of reference by 31 March 1983 to: **Dr. Andre Cote, Dean of Arts and Sciences, Barry University, Miami Shores, Fla. 33161.**

POSITIONS OPEN

ASSISTANT PROFESSOR—CELLULAR AND MOLECULAR BIOLOGY

The Biology Department at the University of Utah anticipates a vacancy and invites application for a tenure-track position as assistant professor in the general area of cellular and molecular biology. Applicants with scientific interests in development/morphogenesis and plant biochemistry are particularly encouraged to apply, but all applicants will be considered regardless of specific research area.

The department is a highly diverse community. We seek faculty members with broad interests and the ability to interact widely within this group.

Applications, including curriculum vitae, a description of research plans, and a list of at least three referees, should be sent to:

**Cell-Molecular Search Committee
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Apply no later than 15 April 1983. *The University of Utah is an Equal Opportunity/Affirmative Action Employer.*

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The Wilkes College Department of Earth and Environmental Sciences seeks applications for a meteorologist for the 1983-1984 academic year. This is a tenure-track appointment. Primary responsibility is undergraduate teaching, including courses in synoptic meteorology, dynamic meteorology, and air quality. Ph.D. is preferred; A.B.D. acceptable. Salary and rank commensurate with credentials and experience. Send résumé and three current letters of reference by 15 March to:

**Dr. Mike Case
Department of Earth and Environmental Sciences
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The Department of Psychology at Williams College has a 1-year replacement opening for a **BEHAVIORAL NEUROSCIENTIST/PHYSIOLOGICAL PSYCHOLOGIST** beginning 1 July 1983. Candidates should be prepared to teach courses in brain and behavior, advanced topics in physiological psychology/behavioral neuroscience, and, possibly, statistics. Facilities and funding for research are available. The application deadline is 15 March 1983. Send applications to: **Paul R. Solomon, Department of Psychology, Williams College, Williamstown, Massachusetts 01267.**

BIOLOGISTS. Three faculty positions are available September 1983 in the Department of Biology, The Pennsylvania State University Commonwealth Educational System. **Altoona Campus, Altoona, Pa.:** position requires teaching introductory courses in general biology, botany, and environmental biology. **Berks Campus, Reading, Pa.:** position requires teaching introductory courses in general biology and botany; microbiology background desirable. **New Kensington Campus, New Kensington, Pa.:** preferred areas: anatomy, physiology, or ecology; duties include teaching general biology, zoology, and introductory courses in one or more of the above subject areas. Candidates must have Ph.D. degree. Continuing scholarly activity, including research and publication, will be required. Salary and rank commensurate with qualifications. Application deadline: 31 March 1983. Send curriculum vitae, transcripts, and three letters of reference to: **Dr. William H. Neff, Box G, 208 Mueller Building, University Park, Pa. 16802.** *The Pennsylvania State University is an Affirmative Action/Equal Opportunity Employer.*

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BIOCHEMIST. A position as assistant professor/research associate will be available this summer in the Department of Biochemistry at the University of Massachusetts. Responsibilities include teaching a course in molecular biology and participation in research on ribosome structure and function in protein biosynthesis. Experience in nucleic acid chemistry and protein synthesis required. Initial appointment for 2 years. Send résumé and names of three references to: **Dr. Robert A. Zimmermann, Department of Biochemistry, University of Massachusetts, Amherst, Mass. 01003,** by 1 April 1983. *An Affirmative Action/Equal Opportunity Employer.*

BIOMEDICAL ENGINEERING ENDOWED PROFESSORSHIP

Applications and nominations are requested for our new, fully endowed Elmer L. Lindseth professorship. The recipient must have demonstrated eminence or extraordinary promise in an active field of biomedical engineering. Suggested areas are biomaterials, transducers/electronics, and bioimaging, but other areas will be also considered. Nominations, inquiries, and applications should be directed to: **Dr. Peter Katona, Chairman, Department of Biomedical Engineering, Case Western Reserve University, Cleveland, Ohio 44106.** *An Equal Opportunity/Affirmative Action Employer.*

CELL BIOLOGY: Cardiovascular Disease.

Pre- and postdoctoral positions are available for research into cellular and molecular biology of cardiovascular disease. Fellows may work in the Departments of Biochemistry, Pathology, or Pharmacology. Subjects covered include growth control, secondary messengers, mutagenesis, connective tissue synthesis, and developmental biology. Inquiries:

**S. M. Schwartz
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Southern Methodist University (SMU) invites applications and nominations for the position of **PROFESSOR and CHAIR OF THE DEPARTMENT OF BIOLOGY.** Candidates should have an outstanding record of research accomplishment and possess qualities of constructive and imaginative leadership. SMU is committed to development of the area of cellular and molecular biology and biochemistry with new positions, facilities, and resources. The successful candidate will be responsible for building a strong program with emphasis in these areas. The department offers B.S., M.S., and Ph.D. degree programs. SMU is strongly committed to the concept of liberal education. The review of applicants will begin on 7 March 1983, and will continue until a suitable candidate is identified. Nominations and applications, including curriculum vitae and the names of five persons who may be contacted for references, should be directed to: **Dean R. Hal Williams, Biology Chair Search Committee, Dedman College, Southern Methodist University, Dallas, Texas 75275.**

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ECOLOGY AND MICROBIOLOGY FACULTY

The Department of Biology of the University of South Florida is soliciting applications for two tenure-track assistant professor positions commencing 29 August 1983. Candidates must have a Ph.D. degree and postdoctoral experience is preferred. Individuals with specialties in:

- 1) Plant community ecology
- 2) Molecular microbiology (using either eukaryotic or prokaryotic systems)

should submit curriculum vitae and summary of research plans, and should solicit three letters of recommendation. Recent Ph.D.'s should forward a graduate transcript immediately to: **Chairman, Search Committee, Department of Biology, University of South Florida, Tampa, Fla. 33620.** The Department of Biology currently has 32 faculty members and a variety of degree programs including the Ph.D. *The University of South Florida is an Equal Opportunity/Affirmative Action Employer and applications from women and minorities are encouraged.*

POSITIONS OPEN

THE AUSTRALIAN NATIONAL UNIVERSITY invites applications for **CHAIR OF MATHEMATICS** in the **DEPARTMENT OF MATHEMATICS, FACULTY OF SCIENCE**. The chair became vacant at the end of 1982 on the retirement of Professor A. Brown, professor of applied mathematics. It will be available for filling from January 1984. Candidates should have an outstanding record of research in mathematics and have an active interest in the applications of their area. Applications would be welcome from scholars in any area of applied or applicable mathematics, including computational mathematics. The normal duties of a professor are to provide leadership and to play an active role in the undergraduate and postgraduate teaching and the research activities of the department. The professor will be expected to be, from time to time, head of Department of Mathematics. The University expects senior staff to be available for election on occasion as dean of faculty. Salary is at the rate of A\$46,977 per annum. Current exchange rates: A\$1 = U.S.\$.97 = U.K.£ .62P. Appointment as professor is to retiring age (65 years). Reasonable appointment expenses are paid; superannuation; assistance with housing. The University reserves the right not to make an appointment or to make an appointment by invitation at any time. Applicants may obtain further particulars from: **The Registrar, The Australian National University, P.O. Box 4, Canberra, Australia**, with whom applications close on 31 March 1983.

THE UNIVERSITY OF ALBERTA DEAN FACULTY OF MEDICINE Edmonton

The University of Alberta is seeking an academic and administrative leader for its Faculty of Medicine.

The establishment by the Alberta Government of the Alberta Heritage Foundation for Medical Research should permit the growth of the Faculty of Medicine into a major centre of medical research and teaching.

The appointment will take effect when a candidate selected by a search committee and approved by the Board of Governors is available, as soon after 1 July as possible.

Written nominations or applications for the position, accompanied in the latter case by a résumé of qualifications and experience and the names of three referees, should reach the Vice President (Academic) by 1 April 1983:

Vice President (Academic)
The University of Alberta
Room 3-5 University Hall
Edmonton, Alberta, Canada T6G 2J9

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CORNELL UNIVERSITY

Dean of the Graduate School of Medical Sciences and Associate Dean of the Medical College for Research

Cornell University invites applications from qualified candidates for the combined position of Dean of the Graduate School of Medical Sciences and Associate Dean of the Medical College for Research. The dean is the chief academic and administrative officer of the Graduate School and is responsible for graduate education and the appointment, promotion, and review of the Graduate Faculty at the Medical Center in New York City. The associate dean of the Medical College has leadership responsibility for the development and oversight of research activities.

This is a senior administrative position which requires a Ph.D. or M.D. degree with extensive experience in graduate research training and a distinguished record in biomedical research. Demonstrated leadership qualities and familiarity with sources of extramural research support is desirable. Salary is commensurate with a senior administrative position at a Medical Center.

Applicants should submit current curriculum vitae which includes a list of publications to:

Joanne Blauer
Secretary of the Medical College
Cornell University Medical College
1300 York Avenue, Room F-100
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POSITIONS OPEN

DIRECTOR, SCHOOL OF CHEMISTRY GEORGIA INSTITUTE OF TECHNOLOGY

We are seeking a person of professorial rank who has a record of research excellence and is desirous of taking on the management of an active and successful chemistry department with a faculty of 28. Please address inquiries and a résumé to: **Dr. Richard F. Browner, Chairman, Search Committee, School of Chemistry, Georgia Institute of Technology, Atlanta, Georgia 30332, Georgia Institute of Technology is a Unit of the University System of Georgia and is an Equal Opportunity/Affirmative Action Employer.**

ENVIRONMENTAL ENGINEERING UNIVERSITY OF SOUTHERN CALIFORNIA

The Environmental Engineering Program of the Civil Engineering Department at the University of Southern California (USC) invites applications for one or more tenure-track faculty positions at the assistant professor level. Individuals with backgrounds in air pollution or hazardous waste will be given preference. Candidates will be expected to develop vigorous research programs and to teach undergraduate and graduate classes.

The appointments are expected in September 1983. Applications will be accepted until the positions are filled. A résumé and a list of three references should be sent to:

Dr. Joseph S. Devinny
Biegler Hall of Engineering 213
University of Southern California
Los Angeles, Calif. 90089-0231

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FACULTY POSITION in the Fels Research Institute. A new tenure-track position is available in the biochemistry program in the **FELS RESEARCH INSTITUTE**, Temple University School of Medicine. This position is for an assistant professor but a higher level will be considered. Areas of particular interest are: biochemistry of the cell nucleus with special reference to the genetic elements and proteins, animal- or immunogenetics, cytoskeletal structure, and receptors. Send curriculum vitae and a brief statement of independent research plans, and have three letters of recommendation sent to: **Dr. Gerald Litwack, Chairman, Search Committee, Fels Research Institute, Temple University School of Medicine, 3420 North Broad Street, Philadelphia, Pa. 19140. An Equal Opportunity Employer.**

FACULTY POSITION
ENGINEERING MATERIALS PROGRAM tenure-track position now open for teaching and research in polymer science/engineering. Background in theory required. Prefer candidates with experience after Ph.D. Send résumé to: **Dr. John D. Hoffman, Director, Engineering Materials Program, Department of Chemical and Nuclear Engineering, University of Maryland, College Park, Md. 20742. An Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION AVAILABLE. The Department of Biology, College of Notre Dame of Maryland, seeks applicants for a position at the level of instructor/assistant professor, beginning September 1983. M.S./M.A. is minimal; Ph.D. preferred. Teaching experience is desirable. Primary teaching responsibility will be in the areas of genetics and embryology, with additional assignments in physiology and introductory biology. Assigned courses will be distributed between day and weekend divisions. Send letter of application, résumé, and three letters of recommendation to: **Dr. Cynthia Wang, Chairman, Department of Biology, College of Notre Dame of Maryland, 4701 North Charles Street, Baltimore, Maryland 21210.**

FACULTY POSITION IN BIOTECHNOLOGY— MOLECULAR BIOLOGY

Assistant professor, tenurable, in Department of Biology. Salary dependent on qualifications. Beginning August 1983. Experience in recombinant DNA techniques necessary. Duties to include assisting in developing and teaching in B.S. and M.S. programs in biotechnology, pursuing own research, and some participation in general departmental teaching. A Ph.D. is required. Submit curriculum vitae, reprints, transcripts, and statement of research interests, and arrange to have three letters of reference sent to: **Dr. Charles E. Bland, Chairman, Department of Biology, East Carolina University, Greenville, North Carolina 27834. Closing date: 25 March 1983. East Carolina University is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

FACULTY POSITION IN SOLID EARTH GEOPHYSICS

The Department of Geological Sciences of Columbia University seeks applicants for a faculty position (tenure-track or tenured) in solid earth geophysics. Consideration will be given to candidates in earthquake seismology, marine seismology, and other disciplines in solid earth geophysics. Appointees would be expected to develop a vigorous research program at Lamont-Doherty Geological Observatory and to contribute to undergraduate and graduate teaching in geophysics. Preference will be given to candidates with strong backgrounds in quantitative methods of analyzing geophysical data. Qualified candidates should submit their curriculum vitae and the names of three referees to: **Professor A. B. Watts, Chairman of Solid Earth Geophysics Search Committee, Lamont-Doherty Geological Observatory, Palisades, New York 10964, by 15 April 1983.**

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Comprehensive Cancer Center and Division of Hematology-Oncology—**FACULTY POSITIONS** available in large research-oriented division for both Board-certified **hematologists** and **oncologists**. Send inquiries and curriculum vitae to: **Albert F. LoBuglio, M.D., Director, Comprehensive Cancer Center, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294. Affirmative Action Employer.**

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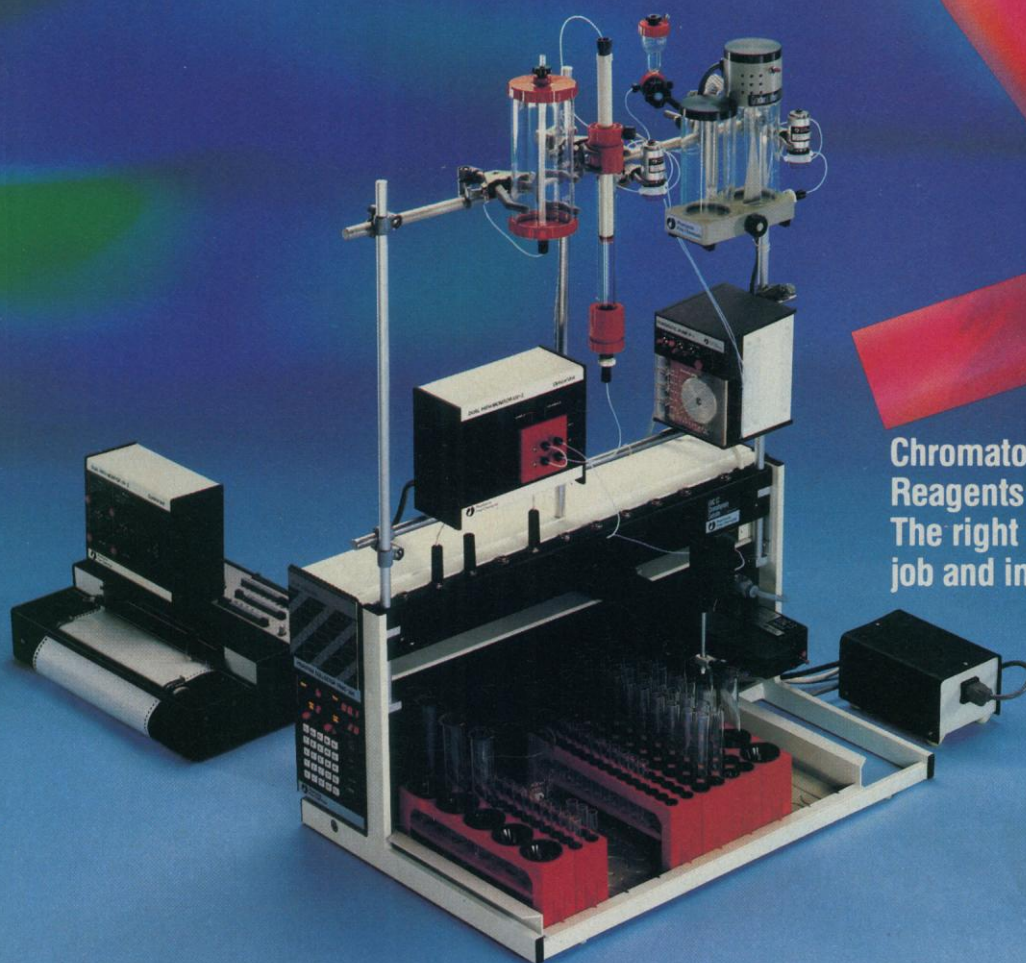
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MEDICINAL CHEMISTRY FACULTY POSITION—Twelve-month, tenure-track, state-funded position. Ph.D. required; postdoctoral experience is highly desirable. Strong synthetic medicinal chemistry background is preferred. Development of an active research program which complements ongoing research in the department is expected. Teaching responsibilities are in graduate and undergraduate medicinal chemistry courses. Send résumé, transcripts, description of research interests, and three letters of reference to: **W. L. Nelson, Department of Medicinal Chemistry, BG-20, School of Pharmacy, University of Washington, Seattle, Washington 98195. An Equal Opportunity/Affirmative Action Employer.**

MICROBIOLOGY POSITION. Starting 1 September 1983, a 1-year replacement position will be available to teach each semester an introductory course in molecular (cell) biology or a non-major introductory biology course. In addition, each semester an advanced undergraduate course will be taught, preferably immunology and some other area of microbiology. Also, weekly participation in a senior seminar is expected. Please send curriculum vitae and three letters of recommendation by 25 March to: **Dr. R. K. Pettegrew, Chairman, Biology Department, Denison University, Granville, Ohio 43023. Denison is an Equal Opportunity/Affirmative Action Employer.**

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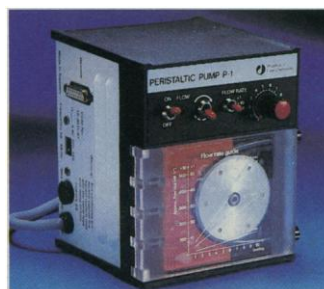


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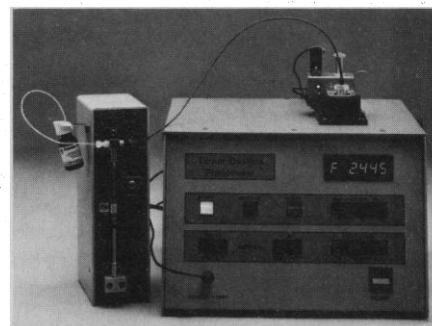
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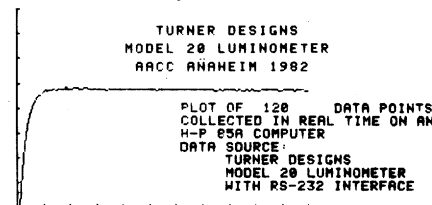
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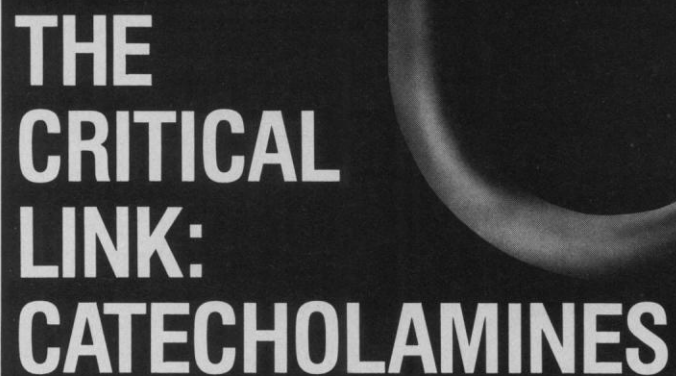
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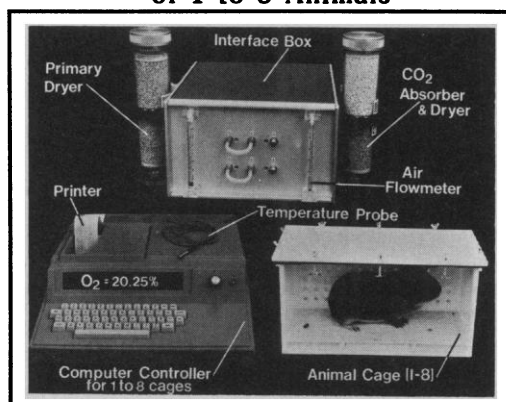
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EXECUTIVE DIRECTOR

The National Research Council (NRC), the principal operating arm of the National Academy of Sciences and the National Academy of Engineering, a nationally prominent non-profit, non-governmental institution located in Washington, D.C., invites applications for the position of Executive Director of the Office of Scientific and Engineering Personnel (OSEP). The OSEP is a major resource of expertise on the status, effective development, utilization, and supply and demand of scientific and engineering personnel in the United States and other nations.

The executive director manages OSEP as one of eight major program units of the NRC. Responsibilities include providing advice to the chairman of the NRC, program initiation, administration and review, development of funding and budgets, and supervision of the staff of more than 25 professionals and 35 supporting staff. The executive director also supervises the NRC fellowship and associateship programs.

A Ph.D. or equivalent is desirable; with a broad background in science and technology with relevance to the aspects of scientific and engineering personnel described above. Candidates should have a minimum of 10 years of experience relating broadly to national resources in this field and management of large peer reviewed programs such as postdoctoral fellowship and associateship programs. Substantial leadership experience is required in program development, policy analysis, and policy formulation. Familiarity with activities of government research and development agencies, contract and grant procedures, and institutions of higher education is essential.

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GENERAL: The CSIRO Marine Laboratories, which include the Divisions of Fisheries Research and Oceanography, is Australia's principal marine research institution, employing about 200 scientists and support staff to investigate the physical, chemical, and biological features, including fisheries, of the oceans around Australia. The main laboratory is at Cronulla in Sydney and there are smaller laboratories in Brisbane and Perth. Two well-equipped chartered vessels (53 meters and 43 meters) and on-line access to a Cyber 76 computer are available for research.

The Sydney activities will be transferred to new laboratories being constructed in Hobart, Tasmania, and the appointee must be prepared to transfer to Hobart about mid-1984. The Australian Government has also agreed to the acquisition by CSIRO of a modern oceanographic ship to replace the presently chartered *Sprightly*.

Collaboration between the Division of Fisheries Research and the Division of Oceanography is actively encouraged and facilitated by the sharing of support resources such as ships, library, and computer systems.

The interests of the Division of Fisheries Research encompass marine biology and ecology, ocean productivity and population dynamics of commercial and potentially commercial fish, crustaceans, and molluscs. The Australian Fishing Zone receives special attention.

DUTIES: The appointee will be required to co-ordinate and develop the biological oceanographic research programmes in the Division and to reorganize and direct biological oceanographic programmes at the Sydney laboratory. The appointee will be the interface between the Division of Fisheries Research and the Division of Oceanography, to forge collaborative programmes between biological and physical and chemical elements of the two Divisions. The appointee would also be expected to initiate and carry out a personal research programme on a suitable facet of biological oceanography.

QUALIFICATIONS: For this senior appointment a marine scientist of outstanding achievement in biological oceanography, with specialist knowledge of biochemistry and microbiology, is required. He or she must be capable of research leadership of a high order, must have a Ph.D. degree, or equivalent qualifications, in a relevant science with training in biology and have at least 12 years of postdoctoral experience. A substantial record of significant research publications is essential.

TENURE: Indefinite with Australian Government superannuation (pension) benefits available.

APPLICATIONS: In writing, quoting reference number A0177 and giving full personal particulars, including details of qualifications and experience, copy of academic transcripts, and the names of at least three professional references should reach:

The Acting Chief
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CSIRO
P.O. Box 21
Cronulla, NSW 2230, Australia

By 25 March 1983.

NATIONAL SCIENCE FOUNDATION HEAD, MATERIALS RESEARCH LABORATORY SECTION

The Division of Materials Research is seeking qualified candidates for the position of head of the Materials Research Laboratory Section, which also includes responsibility for the National Magnet Laboratory and synchrotron radiation and small angle scattering user facilities. The person selected will receive either a permanent appointment or a 1- or 2-year rotational appointment (requiring leave of absence from current employment). This position is part of the Senior Executive Service with a salary ranging from \$56,945 to \$61,515.

A Ph.D. or equivalent experience in one of the materials-related science or engineering disciplines is required. Substantial research administration involving multidisciplinary research programs, recognized professional standing in the materials research community, and supervisory experience for the achievement of organizational objectives through subordinates are also essential.

Applicants should contact: Margaret Cademartori, telephone: 202-357-7857, to request announcement EPS 83-5 for a career appointment or EPS 83-15 for a rotational appointment. Announcements contain additional qualification requirements as well as instructions concerning preparation of supplemental narrative required with SF-171 as application. Send SF-171, narrative, and publication list to: National Science Foundation, Executive Personnel Section, Room 212, 1800 G Street, NW, Washington, D.C. 20550 (EPS 83-5/83-15). Applications must be received by 6 May 1983.

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P.O. Box 8299
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Equal Opportunity Employer M/F/H

TM

POSITIONS OPEN

HUMAN ANATOMIST—Ph.D.

Tenure-track position at the assistant professor level is available August 1983. The candidate should have a specialty in neuroanatomy and a minimum of 2 years of teaching experience in a medical or allied health school. Teaching responsibilities include cadaver based anatomy and neuroanatomy to undergraduate students in medical technology, nursing, and physical therapy, and to pre-professional school students. Grand Valley is primarily a teaching institution and opportunities for research are limited. Closing date for applications is 30 April 1983. Please submit a letter of application and curriculum vitae to:

Dr. William C. Bell
Acting Director
School of Health Sciences
Grand Valley State College
Allendale, Mich. 49401

IMMUNOLOGIST

M.D./Ph.D. (or equivalent) with experience of five or more years in human transplantation genetics and human immunology with particular emphasis on serological and cellular tissue typing, biochemical and biophysical characterization of xeno- and alloantibodies directed against human cell surface antigens as well as their respective targets. Demonstrated experience in mouse and human somatic cell hybrid technology and in establishing cell lines in vitro and selecting their enzymatic mutants. Salary range: \$25,000 to \$31,000. Please forward curriculum vitae to:

Susan Sczechowicz
The Wistar Institute
36th and Spruce Streets
Philadelphia, Pa. 19104

INORGANIC CHEMISTRY. Iowa State University expects to fill a tenured position in this area, for which a strong record of innovative research supported by external funding is required. An aptitude for teaching at all levels must also be evidenced. The department has a particular interest in individuals whose research concerns the theoretical aspects of solid-state inorganic chemistry, although candidates in other specialties will also be considered. The position is nominally at the level of associate professor with tenure, although highly qualified candidates at other levels will also be considered. Filling of this position is contingent upon final administrative approval. Applications or nominations should be sent to: **Professor David K. Hoffman, Chairman, Department of Chemistry, Iowa State University, Ames, Iowa 50011.**

OCEAN SCIENCE EXECUTIVE SECRETARY

The Commission on Physical Sciences, Mathematics and Resources of the National Research Council is seeking applicants for the position of Executive Secretary for the Board on Ocean Science and Policy. The Board has responsibility for examining issues in national and international ocean science and policy affairs. The incumbent will be responsible for overall management, planning, and direction of the Board's program in consultation with the chairman of the Board and the executive director of the Commission. Responsibilities will include identifying issues for potential Board activities, communications with sponsoring agencies, recruitment and supervision of staff, fiscal management, economic and policy analysis, and report preparation. Candidates should have a Ph.D. or equivalent, preferably in oceanography or related physical or biological science, approximately ten or more years in marine science or ocean policy, and demonstrated effective administrative and communication skills. Please send résumé to: **Dr. R. G. Kasper, Executive Director, Commission on Physical Sciences, Mathematics and Resources, National Research Council, 2101 Constitution Avenue, NW, Washington, D.C. 20418.** An Equal Opportunity Employer.

PHYSIOLOGIST—A tenure-track assistant professor position for fall 1983. Teaching responsibilities will include general physiology, biochemistry, and general biology at the undergraduate level and graduate courses in physiology/biochemistry areas. The successful candidate must have Ph.D. and will be expected to direct undergraduate and M.S. level research. Send résumé and three letters of reference by 21 March 1983 to: **Dr. William Wissinger, Department of Biology, St. Bonaventure University, St. Bonaventure, N.Y. 14778.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

MARINE GEOCHEMIST. The Marine Sciences Program, University of California at Santa Cruz, has a tenure-track position at assistant professor level, effective July 1983. Preference will be given to candidates able to complement and interact with existing marine science faculty in research areas such as seawater/particle interactions, early diagenesis, hydrothermal systems and seafloor volcanism, and paleo geochemistry; but candidates in all fields of marine geochemistry will be considered. The applicant will be expected to develop a strong research program with a sea-going component, and teach undergraduate and graduate courses. Send inquiries, curriculum vitae, a statement of research objectives, and three references by 1 April 1983 to: **Dr. K. W. Bruland, Marine Science Search Committee, 272 Applied Sciences Building, University of California, Santa Cruz, Calif. 95064.** The University of California is an Equal Opportunity/Affirmative Action Employer.

MOLECULAR GENETICIST

Tenure-track assistant or associate professorship beginning fall 1983. Successful applicant will be required to teach and develop a research program in plant or microbial genetics emphasizing molecular cloning. Submit transcripts, curriculum vitae, statement of teaching-research interests, and the names of three references by 15 March 1983 to:

Search Committee
Department of Botany, Plant Pathology,
and Microbiology
Auburn University
Auburn, Alabama 36849

Auburn University is an Equal Opportunity/Affirmative Action Educational Institution.

MOTOR PHYSIOLOGIST

Motor physiologist on a postdoctoral or assistant professor level to join an active motor control group investigating spasticity. A background in human or animal motor physiology is necessary. The 2-year position is joint between neurosurgery and physiology.

Send your curriculum vitae and names of references to:

Richard D. Penn, M.D.
Associate Professor
Department of Neurosurgery
Rush Medical College
or

Gerald Gottlieb, Ph.D.
Department of Physiology
Rush-Presbyterian-St. Luke's
Medical Center
1725 West Harrison Street
Chicago, Ill. 60612

An Equal Opportunity Employer, M/F

PHARMACEUTICS FACULTY POSITIONS

Pharmaceutics assistant professorships (two), tenure-track, University of Michigan. Ph.D. in physical pharmacy, pharmaceutics, or related discipline. Up to 4 years of postdoctoral experience in a university or industrial research laboratory. Capable of directing graduate students and an independent research program.

Applicants should provide curriculum vitae, description of current research interests, and three letters of recommendation by 31 March 1983 to: **Dr. Gordon L. Flynn, College of Pharmacy, The University of Michigan, Ann Arbor, Michigan 48109.** A nondiscriminatory, Affirmative Action Employer.

PHARMACOLOGIST—The Department of Physiology/Pharmacology at The University of South Dakota expects to fill several tenure-track positions during the 1983-1984 academic year. Appointments will be made at the assistant/associate professor level. Candidates must have a Ph.D. or M.D. degree with relevant postdoctoral experience. Excellence in teaching and research are required. Preference will be given to candidates with research experience in cardiovascular-autonomic pharmacology, neuropharmacology, or renal pharmacology. Teaching responsibilities will include both medical and graduate students. Send curriculum vitae, statement of career goals, and the names of three references to: **Chairman of Search Committee, Department of Physiology/Pharmacology, The University of South Dakota School of Medicine, Vermillion, S.D. 57069.** Salary commensurate with training and experience. Closing dates: 31 March and the last day of each month until filled. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

THE UNIVERSITY OF CALGARY POSITIONS IN PHYSIOLOGY

The Departments of Medical Physiology and Internal Medicine, along with the Renal Research Group of the Faculty of Medicine at The University of Calgary are recruiting individuals with expertise in the area of renal and/or transport physiology. Applications are invited from scientists just finishing their postdoctoral training programs as well as from scientists who have demonstrated several years of productive, independent research. Funding will be provided on a competitive basis from the Alberta Heritage Foundation for Medical Research, a newly established foundation for the support of medical research in the Province of Alberta. Candidates will be appointed at the assistant or associate professor level, depending upon their background and experience. Remuneration will be based on salary scales at The University of Calgary. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

Deadline for receipt of applications is 30 April 1983. Interested candidates please send curriculum vitae, brief description of field of interest, and three names of references to:

Dr. W. L. Veale
Professor and Head
Department of Medical Physiology
Faculty of Medicine
Health Sciences Centre
3330 Hospital Drive, NW
Calgary, Alberta, Canada T2N 4N1

PLANT BIOCHEMIST UNIVERSITY OF ARIZONA

Postdoctoral research associate position available in laboratory with ongoing photosynthesis research. Studies will involve carbon metabolism in chloroplasts and its regulation by the stromal environment. Strong analytical chemical background desirable. Recent Ph.D. in biochemistry, chemistry, or plant physiology required. Salary: \$17,000. Please send curriculum vitae and names of three references to: **Dr. Richard G. Jensen, Department of Biochemistry, University of Arizona, Tucson, Ariz. 85721.** Closing date: 15 March 1983.

Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION Fluorescence Studies of Protein Dynamics

Position available early spring for a Ph.D. experienced in modern luminescence spectroscopy as applied to biomolecules to investigate rapid structural fluctuations of globular proteins. Experience in protein chemistry desirable. Much of the work to be carried out at Bell Laboratories, Murray Hill, New Jersey. Send résumé to: **Dr. A. A. Lamola, Department of Dermatology, College of Physicians & Surgeons, Columbia University, 630 West 168 Street, New York, N.Y. 10032.**

POSTDOCTORAL POSITIONS IN REGULATORY BIOCHEMISTRY

Several postdoctoral and research associate positions will be available on a competitive basis in a research-intensive department of biochemistry. Currently there are 20 postdoctoral fellows and 13 faculty in the department. Research interests include: hormone secretion and action, metabolic regulation; membrane receptor dynamics; membrane transport; regulation of gene expression; protein chemistry of immune system components; and the physical chemistry of membrane structure. Access to several institutional core facilities such as those for tissue culture, hybridoma preparation, fluorescence-activated cell sorting, and protein sequencing is available to all investigators. For further information about individual faculty research programs, please write to: **Dr. Michael P. Czech, Postdoctoral Fellowship Program, Department of Biochemistry, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION available. Seeking person to initiate studies in cellular toxicology and metabolism of cardiovascular tissues. Experience in cell culture techniques, especially of smooth muscle and endothelial cells, and an interest in basic biochemistry and metabolism required. Send curriculum vitae and three references to: **Dr. Paul J. Boor, Department of Pathology, University of Texas Medical Branch, Galveston, Texas 77550.** *Affirmative Action/Equal Opportunity Employer.*

MICROBIAL AND MOLECULAR GENETICS BIOTECHNICAL ADVANCES MAY 9-13, 1983

Sponsored by: Department of Microbiology and Molecular Genetics, Harvard Medical School
at the

PARKER HOUSE, BOSTON

Director: E.C.C. LIN, Ph.D. Co-Directors: J.R. BECKWITH, Ph.D., B.N. FIELDS, M.D.

This course is designed for M.D. and Ph.D. investigators interested in an updating of basics and applied aspects of microbial and molecular genetics. It will provide an in-depth review of the most important areas. Applications to a variety of problems of infectious disease and clinical investigation will be highlighted.

The course is divided into 3 major sections: Bacteria, Animal viruses and Eucaryotic Cells. Basic principles and recent findings will introduce each section and will be followed by the application to the development of vaccines, the synthesis of new bioactive products, and the expansion of our knowledge of disease.

A comprehensive syllabus will be provided.

GUEST FACULTY

D. Baltimore D. Botstein Leonard Guarente Boris Magasanik

HARVARD FACULTY

H. Amos J.R. Beckwith G.M. Cooper B.D. Davis B.N. Fields	D.G. Fraenkel R.N. Goldstein H.M. Goodman L.M. Hereford J.D. Hopkins	A.S.-H. Huang D.L. Kasper D.M. Knipe P. Leder E.C.C. Lin	J.J. Mekalanos J.R. Murphy S.H. Orkin M. Ptashne B.E. Roberts	T.M. Roberts P.A. Schaffer C.D. Stiles M. Syvanen J.W. Szostak	A.N. Weinberg
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TUITION \$475. For application write to: Harvard Medical School, Department of Continuing Education, Boston, MA 02115.
INFORMATION: All Foreign payments must be made by a draft on a United States bank.

ODENSE UNIVERSITY AQUATIC ECOLOGIST

A tenure-track position at the assistant/associate professor level is available at the Institute of Biology, Odense University, Denmark, starting on the earliest convenient date.

The candidate must be trained as an aquatic ecologist and have practical research experience in carbon and energy metabolism in aquatic eukaryotic organisms.

Ecological research at the Institute mainly involves quantifying and analysing regulatory factors affecting energy flow and carbon cycling in benthic ecosystems of shallow waters.

Other research interests at the Institute involve the adaptation of organisms to the environment. These activities encompass biochemistry (anaerobic and aerobic metabolism), physiology (sensory physiology and hormone regulation), ecological physiology (oxygen transport and osmoregulation), toxicology (sublethal effects) as well as ecology.

The successful candidate should be willing to contribute to existing research activities in ecology and be able to teach ecology at all levels. Foreign candidates should be willing to teach in Danish after having acquired a command of the language. (However, teaching in English is allowed at the upper division. All textbooks are in English.)

Conditions of employment are provided by an agreement between the Ministry of Finance and the appropriate trade union.

The professional selection committee will discuss the applications and its recommendation will be sent out to all applicants in its complete form.

For further information contact: *The Chairman, Institute of Biology, Odense University, DK-5230 Odense M, Denmark. Tel. 0045-9-15 86 00 ext. 2752.*

Application in 3 copies marked "Position no. 0181" including the curriculum vitae, information on teaching experience, the names of referees, and reprints on recent publications (in triplicate) should be sent to **Odense University, Journalkontoret, Campusvej 55, DK-5230 Odense M., Denmark** and must be received by 4 pm on Monday, March 28, 1983.

U.S. DEPARTMENT OF ENERGY (DOE)

Fossil Energy Research
Opportunities at the Laramie
Energy Technology Center

Associated Western Universities, Inc. and the Laramie Energy Technology Center announce the availability of summer and year-round fossil energy research opportunities for science and engineering advanced degree holders and faculty at the Western Energy Technology Center located at Laramie, Wyoming.

Research activities in Environmental Sciences for oil shale, coal and tar sand processing include:

**Wastewater treatment/
utilization/ characterization
Gaseous stream
treatment/utiliza-
tion/characterization**

**Solid waste containment/
utilization/geotechnical
and chemical characterization.**

Applications are invited from a wide variety of disciplines: physical, biological and geotechnical sciences; chemical, civil/environmental and geotechnical engineering and statistics.

Advanced degree post-graduates must have obtained the degree within the past 24 months. Length of appointment is one year for post-Master's and renewable for a second year for post-doctoral. In addition, summer appointment opportunities exist at all levels: graduate, undergraduate, and faculty.

The programs are administered by and applications and additional information may be obtained from:

**Program Administrator
Associated Western
Universities, Inc.
142 East 200 South, Suite 200
Salt Lake City, Utah 84111
(801) 364-5659**

AWU

This is an equal opportunity educational program open to U.S. citizens and permanent resident aliens.

POSITIONS OPEN

PLANT MOLECULAR BIOLOGY. Postdoctoral fellow with recombinant DNA experience required immediately to study globulin storage protein genes in wheat and oat with emphasis on DNA sequence arrangements in different polyploids and karyotypic backgrounds. Please send résumé and names of three referees to: **Dr. I. Altosaar, Department of Biochemistry, University of Ottawa, Ottawa, Ontario, Canada K1N 9B4.**

PLANT PHYSIOLOGIST OR RESEARCH CHEMIST

One Federal Career Civil Service position with Agricultural Research Service in Weslaco, Texas, for plant physiologist or research chemist at GS-11 (\$24,508), GS-12 (\$29,374), or GS-13 (\$34,930) level to conduct basic research in post-harvest physiology and biochemistry of subtropical horticultural products. Research objectives include the effect of biotic and abiotic stress, biochemistry and physiology of senescence, and pathogen metabolites. Strong background in both plant physiology and biochemistry preferred. Ph.D. or equivalent education/experience required. *Equal Opportunity Employer.* For application procedures, contact: **L. G. Burkes, USDA-ARS-SRAO, S-1, P.O. Box 53326, New Orleans, La. 70153. Telephone: 504-589-4271.**

POSTDOCTORAL NUTRITION—BEHAVIOR SCIENCE research in cardiovascular disease prevention. Interdisciplinary research emphasized. NIH training grant. U.S. citizens with doctorates in behavioral or social sciences, nutrition, medicine, or related biomedical sciences may send curriculum vitae, statement of research interests, and three letters of reference to: **Dr. Ruth Brennan, Department of Preventive Medicine, Washington University School of Medicine, St. Louis, Mo. 63110.**

POSTDOCTORAL PHYSIOLOGY FELLOW for 2-year laboratory study of brain trauma: regional cerebral blood flow, rCBF control mechanisms, brain electrolytes, and treatment. Experience with microspheres and/or CBF preferred. Work in neurosurgery with joint appointment in physiology. Highly competitive salary, fringes, travel, laboratory technician. Send curriculum vitae to: **Michael E. Carey, M.D., Department of Neurosurgery, Louisiana State University Medical Center, 1542 Tulane Avenue, New Orleans, La. 70112. Telephone: 504-568-6123.**

POSTDOCTORAL POSITION studying the molecular genetics of the transposable element Ty1 of *Saccharomyces cerevisiae* available immediately. Research topics concern the sequence organization, transcriptional regulation, and spontaneous mutagenesis of members of the Ty gene family. These topics will be studied using the techniques of gene cloning, DNA sequencing, in vitro mutagenesis, and classical genetics. The applicant should have a Ph.D. in genetics, biochemistry, or molecular biology and some experience with the techniques to be used. Salary negotiable and dependent upon experience. Send curriculum vitae and names of three references to:

Dr. Philip Farabaugh
Department of Microbiology
University of Connecticut Health Center
Farmington, Conn. 06032
*An Affirmative Action/Equal
Opportunity Employer, M/W/H*

POSTDOCTORAL POSITIONS to participate in ongoing studies in experimental oncology and radiation biology at the cellular and molecular levels. The effects of cancer therapeutic agents (for example, x-irradiation, hyperthermia, and drugs) on cellular and molecular functions, and the molecular basis for growth control of murine malignant cells in culture are the primary area of interest. Available 1 July 1983. Send curriculum vitae and the names of three references to: **Dr. Lyle A. Dethlefsen, Department of Radiology, University of Utah Medical Center, Salt Lake City, Utah 84132.**

POSTDOCTORAL POSITION available immediately for a recent Ph.D. in biochemistry, cell biology, or related discipline, with experience in analytical techniques, to study the pathways and regulation of intracellular protein degradation in mammalian cells. Background in tissue culture or lipids and lipid vesicle preparation preferred. Send curriculum vitae, bibliography, and the names of three references to: **Dr. Allen Frankfater, Associate Professor of Biochemistry, Loyola University Stritch School of Medicine, 2160 South First Avenue, Maywood, Ill. 60153. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

Postdoctoral Positions in Membrane Biochemistry and Molecular Biology of Cell Differentiation and Gene Structure

Research associate and research assistant positions available to work on mammalian and bacterial membrane biochemistry. Research associate for the membrane projects must possess a Ph.D. and have experience in isolation of membranes and phospholipids and the research assistant must possess a B.A. or B.S. A research associate/postdoctoral position is available to work on molecular biology of *Drosophila* muscle development and gene structure. Applicant should have a Ph.D. and recombinant DNA experience is desirable. Salaries open. Interested candidates send résumé to: **Dr. James Vary** (membrane position), or **Dr. Robert Storti** (molecular position), **University of Illinois Medical Center, Department of Biological Chemistry, 1853 West Polk, Chicago, Ill. 60612.**

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

POSTDOCTORAL POSITION available immediately to study mass spectrometry of lipids and/or essential fatty acid metabolism. Résumé, publications list, and three references should be sent to: **Dr. Ralph T. Holman, Director, The Hormel Institute, University of Minnesota, 801 16th Avenue, NE, Austin, Minn. 55912. The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages women and minority applicants.**

POSTDOCTORAL POSITION available immediately to study cholesterol behavior and cholesterol effects on physiological function in biological membranes and human serum lipoproteins, using techniques of cell biology, biochemistry and/or biophysical chemistry. Salary commensurate with experience. Send résumé with three letters of reference to: **Dr. Philip L. Yeagle, Department of Biochemistry, State University of New York at Buffalo, School of Medicine, Buffalo, N.Y. 14214. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available in July 1983 for M.D. or Ph.D. with strong interest in the regulation of proliferation and differentiation of hematopoietic stem cells. U.S. citizenship or permanent residency required. Send curriculum vitae and three references to: **J. L. Spivak, M.D., Hematology Division, The Johns Hopkins Hospital, Baltimore, Md. 21205. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION IN BIOCHEMISTRY to study the structure, mechanism of action, and regulation of lipogenic enzymes. Children's Hospital Medical Center, Research Laboratory, is seeking an individual to work with Dr. Stuart Smith. Salary: \$20,000. Send résumé with either names and telephone numbers of three referees or three letters of recommendation to: **Children's Hospital Medical Center, Personnel Department, 51st and Grove Streets, Oakland, Calif. 94609. Equal Opportunity Employer, M/F.**

POSTDOCTORAL POSITION

For recent Ph.D. with experience in molecular biology, to study the structure and regulation of the mouse amylase gene family. Starting date between 1 April and 1 July 1983. Salary range: \$14,000 to \$17,000. Send curriculum vitae and names of three references to: **Dr. Miriam Meisler, Department of Human Genetics, Box 015, University of Michigan Medical School, Ann Arbor, Michigan 48109.**

POSTDOCTORAL POSITION HUMAN MITOCHONDRIAL GENETICS AND MOLECULAR BIOLOGY

Positions are available at Emory Medical School to study the molecular biology and genetics of the human mitochondrion and the role of mitochondrial genes in human evolution, genetic disease, and cancer. Mitochondrial genes located in both the nuclear and mitochondrial DNA's are being examined by approaches including gene cloning, DNA sequencing, restriction site variation, cell fusion, cell fractionation, and gene transfer. Interested individuals should send curriculum vitae and names of three referees to:

Douglas C. Wallace, Ph.D.
Professor of Biochemistry
Woodruff Memorial Building
Emory University School of Medicine
Atlanta, Georgia 30322

POSITIONS OPEN

POSTDOCTORAL POSITION available for individual with Ph.D. in cell or developmental biology, genetics, or biochemistry. Research concerns of the laboratory include: (i) cellular and molecular mechanisms regulating oocyte maturation, (ii) fertilization, (iii) parthenogenesis, and (iv) somatic cell-germ cell interactions. Please send curriculum vitae and names of references to: **Dr. Allen W. Schuetz, Department of Population Dynamics, Johns Hopkins University, School of Hygiene and Public Health, 615 North Wolfe Street, Baltimore, Md. 21205.**

POSTDOCTORAL POSITIONS

Several NIH postdoctoral fellowships will be available to U.S. citizens with the Ph.D. or M.D. degree on a competitive basis under the sponsorship of an institutional Endocrinology Training Program at the University of Massachusetts Medical Center. Research interests of clinical and basic science faculty in the program include: molecular and cellular basis of hormone action, neuropeptide biochemistry and physiology, regulation of gene expression with recombinant DNA techniques, islet cell morphology and function, and the pathophysiology of diabetes in the BB rat. Access to core facilities such as those for tissue culture, hybridoma preparation, fluorescence-activated cell sorting, and protein sequencing is available to all investigators. For further information about individual faculty research programs, please write to: **Dr. H. M. Goodman, Endocrinology Training Program, University of Massachusetts Medical Center, Worcester, Mass. 01605.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL RESEARCHER; Ph.D. in pharmacology/physiology is required; investigates influence of diabetic and aging processes on the development of alterations in the sensitivity of the rat urinary bladder to drugs that influence autonomic functions; evaluates isolated tissue response using in vitro pharmacological techniques and autonomic receptor binding techniques with statistical analyses of the data collected. Salary: \$15,000. Please contact: **Betty Williams, Ohio Bureau of Employment Services, 3434 Cleveland Avenue, Columbus, Ohio 43224.**

POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS to continue work on projects (mechanism, regulation, monoclonal antibodies, and pathophysiology) concerning Ca^{2+} -dependent protein phosphorylation/dephosphorylation systems stimulated by phospholipid, S-100, parvalbumin and calmodulin in heart, brain, skeletal muscle, and human leukemic cells. Send application to: **Dr. J. F. Kuo, Department of Pharmacology, Emory University School of Medicine, Atlanta, Ga. 30322.** Can be interviewed during Federation Meetings in April in Chicago. *An Affirmative Action/Equal Opportunity Employer.*

RESEARCH ASSISTANT in radiation genetics is needed to carry out mathematical and experimental studies on mutation induction in yeast. A master's degree and experience in medical physics (radiation) and yeast genetics is essential for this post. Submit curriculum vitae and names of two references no later than 1 May 1983 to: **Dr. R. H. Haynes, Biology Department, York University, Toronto, Ontario, Canada M3J 1P3.** In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

RESEARCH ASSOCIATE position available immediately to study the metabolic and endocrine responses to stress and starvation both in vivo and using isolated hepatocytes in culture. Ph.D. required, and applicant should have a background in endocrine physiology and cell biology. Concurrent appointments at Massachusetts General Hospital and the Harvard Medical School. Résumé to: **H. H. Bode, M.D., Shriners Burns Institute, 51 Blossom Street, Boston, Mass. 02114. Equal Opportunity Employer.**

RESEARCH ASSOCIATE. Department of Chemistry at the Massachusetts Institute of Technology (MIT) has an immediate opening for a Ph.D. in chemistry or physics to participate in the study of phase transitions in liquid crystals using a-c calorimetry. Candidates must have a strong background in experimental techniques, computer control and data processing, and liquid crystal theory. Experience with optical characterization of liquid crystal phases is also required. Salary range: \$16,000 to \$18,000 per year. Send résumé and names of three references to: **Professor Carl Garland, Room 6-237, MIT, Cambridge, Mass. 02139. An Equal Opportunity/Affirmative Action Employer.**

**KING FAISAL UNIVERSITY
COLLEGE OF MEDICINE
DAMMAM, SAUDI ARABIA
1983-1984 Academic Year**



King Faisal University, College of Medicine, invites applications from qualified men and women for the 1983-1984 academic year in the following disciplines:

**CHEMISTRY
BIOLOGY
PHYSICS**

**ANATOMY
BIOCHEMISTRY
EPIDEMIOLOGY
PATHOLOGY**

**MICROBIOLOGY
PHYSIOLOGY
IMMUNOLOGY**

Doctorate and minimum of 2 years teaching experience (medical school) required. Language of instruction is English. Interviews will be held in London and Houston.

Salaries are highly competitive and negotiable. Benefits include free furnished housing, educational allowances, air tickets to and from Saudi Arabia once each year for family of four, 60-day paid vacation, and liberal overweight baggage allowance. No Saudi income tax.

Send curriculum vitae with day and evening telephone numbers and the names and addresses of three references to:

**Dr. Tawfik Tamimi
Dean, College of Medicine
c/o U.S. Recruiting Office
2425 West Loop South, Suite 540
Houston, Texas 77027**

or

**c/o U.K. Recruiting Office
29 Belgrave Square
London, S.W.1X, 8QB, England**

**PROVOST/VICE PRESIDENT
FOR ACADEMIC AFFAIRS**

THE UNIVERSITY OF NORTH FLORIDA

The University of North Florida (UNF) invites applications and nominations for the position of Provost and Vice President for Academic Affairs. UNF, one of nine public institutions in the State University System of Florida, is a comprehensive upper-level university offering degree programs at the junior, senior, and professional graduate levels. Academic programs are coordinated through its three colleges and two divisions; the Colleges of Arts and Sciences, Business Administration, Education and Human Services, and the Divisions of Technologies and Nursing.

Candidates for the position shall have an earned doctoral degree in a discipline taught at UNF, be qualified to hold the rank of professor, and have at least 4 years of successful experience in academic administration in a college or university.

Applications and nominations, with an appropriate cover letter expressing an interest in the position, two copies of a complete résumé, and the names, addresses, and phone numbers of at least five personal references knowledgeable of the candidate's current and past performance, should be postmarked no later than 11 March 1983, and should be addressed to:

**Dr. Jay A. Smith, Jr., Chairperson
Search Committee for Provost and Academic Vice President
c/o LaVesta Kearns
Personnel Department
University of North Florida
4567 St. Johns Bluff Road, South
Jacksonville, Florida 32216**

The selection process will be conducted under provisions of Florida's Government in the Sunshine and Public Record laws. The appointment will be effective 1 July 1983. *UNF is an Equal Opportunity/Affirmative Action Employer.*

HEAD OF ADVANCED DRUG DELIVERY RESEARCH

Horsham, England

We plan to set up a new research unit at our premises in Horsham, West Sussex.

The principal function of the new unit will be to elaborate and test novel concepts for the delivery of drugs. It will complement the R & D activities in the field of modern pharmaceuticals being pursued by CIBA-GEIGY mainly in the United States and Switzerland.

Applications are invited from suitably qualified scientists, aged between 35 and 50 years. Previous experience as head of a multidisciplinary team with a successful record of resourceful and original research in biology, pharmaceuticals or physical chemistry would be an advantage.

The head of the new unit will report to the U.K. Director of Pharmaceutical Research. The salary and conditions of work offered will be in keeping with the high standards of scientific ability and leadership qualities expected.

Applications should be addressed to Dr. A. M. White, CIBA-GEIGY Pharmaceuticals Division, Wimbleshurst Road, Horsham, West Sussex RH12 4AB, England.

CIBA-GEIGY

POSITIONS OPEN

NATIONAL SCIENCE FOUNDATION

National Science Foundation (NSF), Division of International Programs (U.S.-Latin America Cooperative Science Programs), is seeking applicants for **PROGRAM ASSOCIATE** with the Latin America and Pacific Section. The assignment is for 1 or 2 years under the Intergovernmental Personnel Act (from state and local government agencies or institutions of higher education) starting August 1983. A Ph.D. or its equivalent in science or engineering is required. Latin America area and language knowledge highly desirable. The individual selected will remain an employee of his/her institution which may be reimbursed by NSF for a portion of his/her salary and other costs related to the assignment. Institutions should forward nominations by 15 March 1983 to: **Dr. J. Elbert O'Connell, Latin America and Pacific Section, Division of International Programs, National Science Foundation, Washington, D.C. 20550. Telephone: 202-357-9558.**

RESEARCH ASSISTANT

A position in a not-for-profit, basic research laboratory is available immediately. B.S. degree in molecular biology or biochemistry/cell biology required. Some experience preferred in the following areas: isolation and analysis of nucleic acids, microbiological techniques, cell culture, recombinant DNA methods, DNA sequencing, and general biochemistry. The research assistant will be responsible for laboratory work in the areas of molecular and cellular biology. Starting salary dependent on qualifications. Salary range: \$11,440 to \$14,700. Please send detailed curriculum vitae, transcripts, and names of four references to:

Personnel Office
Trudeau Institute
P.O. Box 59
Saranac Lake, N.Y. 12983

RESEARCH ASSOCIATE BIOCHEMISTRY OF BLOOD COAGULATION

Position available in spring or summer for biochemist with background in proteins and enzymes, and zero to 5 years of postdoctoral training. The project involves studies of the rates and equilibria of protein-protein interactions in blood coagulation using fluorescence and kinetic techniques in a very well-equipped laboratory. Excellent salary and fringe benefits. Send curriculum vitae to: **Dr. Joseph D. Shore, Division of Biochemical Research, Henry Ford Hospital, 2799 West Grand Boulevard, Detroit, Michigan 48202.**

RESEARCH SCIENTIST. Responsible for research and development to devise methods and conditions for mass culture of plant cells, and so forth, for the purpose of producing secondary metabolites in vitro. Requires Ph.D. in chemical engineering (with emphasis in biochemical engineering) and 1 year of research work in plant tissue culture. Also requires strong research background in biochemical engineering and plant tissue culture for mass culture of plant cells. Salary: \$38,000 per year. Send advertisement with résumé to: **Kristina Combs, International Plant Research Institute, Inc., 853 Industrial Road, San Carlos, Calif. 94070.** Must have legal right to work.

TERATOLOGIST/TOXICOLOGIST BUSHY RUN RESEARCH CENTER UCC/CMU

The Bushy Run Research Center (BRRC), operated by the Union Carbide Corporation (UCC) and Carnegie-Mellon University (CMU), is seeking a Ph.D. teratologist/toxicologist (or a person with equivalent experience) who has performed scientific studies in teratology and reproductive toxicology, and has had relevant professional publications. The person will plan and coordinate the activities pursuant to the conduct and reporting of reproductive studies involving industrial chemicals. Experience with multiple species and multigeneration reproductive studies is essential.

BRRC is located 25 miles east of Pittsburgh in beautiful rolling countryside. BRRC is AALAS-accredited and was the second laboratory in the country to be accredited by the Toxicology Laboratory Accreditation Board. Send résumé and references to: **R. J. Jackman, Bushy Run Research Center, R.D. Number 4, Mellon Road, Export, Pa. 15632.** Salary will be commensurate with training and experience.

BRRC is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

RESEARCH POSITION—AUDITORY NEUROPHYSIOLOGY

A position is available at the Electrophysiology Laboratory of the Siegel Institute, Michael Reese Hospital, for an **electrophysiologist or neurophysiologist** with computer science background to pursue human and animal research in auditory evoked potentials. Candidates should have training or experience in collaborative neurophysiologic studies of the auditory system. Staff of the Electrophysiology Laboratory currently hold research/teaching appointments in the Department of Surgery (Otolaryngology), University of Chicago.

Interested applicants should submit curriculum vitae, a brief statement of research training, experience, and interests, and the names of three individuals who can supply letters of recommendation to:

Laszlo Stein, Ph.D., Director
Siegel Institute
Michael Reese Hospital and Medical Center
Lake Shore Drive at 31st Street
Chicago, Ill. 60616
Telephone: 312-791-2910

RETINAL ELECTROPHYSIOLOGIST. Research associate or postdoctoral position available immediately to study the c-wave as a clinical tool in man and investigate responses of the retinal pigment epithelium in mammals. Send curriculum vitae and references to: **Dr. Michael F. Marmor, Division of Ophthalmology, A227, Stanford University Medical Center, Stanford, Calif. 94305.** *Stanford is an Equal Opportunity Employer; applications from women and minorities are encouraged.*

SCIENTIFIC DIRECTOR

American Red Cross Blood Services, Tidewater Region, is establishing a research program in conjunction with Eastern Virginia Medical School in July 1983. Specific area of ongoing research includes studies on red cell, platelet and granulocytes, biochemistry, preservation, and immunology. Seeking scientific director to supervise the research division, and develop and execute research in blood related areas. Position will carry faculty appointment and teaching responsibilities. Applicants must have an M.D. or Ph.D. or master's degree or F.I.M.L.S. or equivalent; 5 years of full-time experience in research and a record of publications/research in blood related topics. Résumé with salary history should be sent to: **American Red Cross, Tidewater Region, Personnel Department, P.O. Box 1836, Norfolk, Va. 23501.** *Affirmative Action Employer.*

RESOURCES FOR THE FUTURE VICE PRESIDENT

Nonprofit, nonadvocacy organization for research and public education concerning natural resources, energy, and environmental quality seeks a vice president to begin fall 1983.

Person selected will have primary responsibility for developing and administering research program and evaluating scholarly manuscripts for publication, in addition to serving as president's chief deputy.

Organization's strengths are in resource and environmental economics, but candidates are sought with broad experience in applied economic and multidisciplinary research and administration. Must deal effectively with 100-member staff and be able to represent the institution to the research and funding communities and to the public.

An Equal Opportunity Employer; women and minority candidates are encouraged to apply. Send letter and résumé by 1 May to:

Emery N. Castle, President
Resources for the Future
1755 Massachusetts Avenue, NW
Washington D.C. 20036

VIROLOGIST

An established biotechnology company is looking for a **project leader** in the Corporate Research Division. The project leader will be responsible for developing immunological reagents for the diagnosis of bacterial and viral infections in man. Candidate must have a Ph.D. in microbiology, biochemistry, or immunology with two or more years of postdoctoral experience with clinically relevant viruses. A strong background in mammalian cell culture is desirable. Applicants should send a statement of career goals, curriculum vitae, and three references to: **Dennis Murray, Director, Corporate Research Division, Kallestad Laboratories, Inc., 2101 East Ben White Boulevard, Austin, Texas 78741.**

POSITIONS OPEN

VETERINARY MICROBIOLOGIST: Will assume medical responsibility for a large chimpanzee colony. Duties include organizational and management of several research projects with emphasis on viral hepatitis. Will also carry out independent and collaborative research on immunology of clinical and viral diseases, in particular viral hepatitis and oncology. Applicants must have a D.V.M. with at least 2 years of experience with nonhuman primates (preferably chimpanzees); 3 years of concurrent or additional experience as a research scientist (microbiologist/immunologist/virologist) investigating the immunology of infectious diseases is also required. Annual salary: \$35,000. Apply at: **The Texas Employment Commission, San Antonio, Texas,** or send résumé to: **Texas Employment Commission, TEC Building, Austin, Texas 78778, Job order number 3096091.** *Advertisement paid for by an Equal Employment Opportunity Employer.*

ANNUAL MEETING

Call for Papers/Attendance, **SECOND ANNUAL MEETING, International Association for Impact Assessment (IAIA)**, 25 and 26 May 1983 (immediately prior to the 1983 AAAS Meeting). Book Cadillac Hotel (a AAAS hotel), Detroit, Michigan. Theme: **Anticipating the Future: The Changing Public Context of Developing Impact Assessment Methodologies.** Contact: **Daniel A. Bronstein, Program Chair, IAIA, Department of Resource Development, Michigan State University, East Lansing, Mich. 48824.** Abstract deadline: 31 March 1983.

SYMPOSIUM

5th International Symposium on Affinity Chromatography and Biological Recognition (ACBR), 12 to 17 June 1983, Annapolis, Maryland. Topics: macromolecular biorecognition; quantitative uses, design of affinity methods; multispecificity; new purification methods; hydrophobic recognition; affinity therapeutics; analytical applications, clinical diagnostics; current trends and prospects. Registration deadline: 15 April. Information, registration, housing forms: **5th ACBR, 9650 Rockville Pike, Bethesda, Md. 20814.**

ADVANCED STUDY INSTITUTE

A NATO ADVANCED STUDY INSTITUTE on "Industrial Aspects of Biochemistry and Genetics," to be held 4 to 14 September 1983 in Izmir, Turkey.

For further information: **Dr. G. Alaeddinoglu, Middle East Technical University, Department of Biological Sciences, Ankara, Turkey. Telephone: 90-41-237100, extension 3109. Telex: 42761 odtk tr.**

COURSES

SCANNING AND TRANSMISSION ELECTRON MICROSCOPY: A series of practical courses will be offered during June. They are designed to introduce the participants to the theory and practical aspects of electron microscopy. Specimen preparation, operation of electron microscopes, x-ray microanalysis, and photographic techniques will be stressed. TEM, 6 to 17 June; SEM, 20 to 24 June; combined, 6 to 24 June. Contact: **Fred Lightfoot, George Washington University, 2300 I Street, NW, Washington, D.C. 20037. Telephone: 202-676-2881, or 3511.**

ASSISTANTSHIPS

GRADUATE ASSISTANTSHIPS

Assistantships in Ph.D. program available for a limited number of qualified graduate students. All students supported by teaching or research assistantships carrying 12-month stipends of \$6250 (plus tuition and dependency allowances). Active research programs include behavior, biochemistry, biophysics, cell biology, development, genetics, microbiology, molecular biology, neurophysiology, and physiology. For further information, write: **Director of Graduate Admissions, Department of Biology, Wesleyan University, Middletown, Conn. 06457.**

The MX Missile and the Strategic Balance of Power

A collection of recent articles from SCIENCE on contemporary strategic ideology is now available for use by professionals, teachers, and researchers interested in the nuclear arms race.

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— *The Boston Globe*

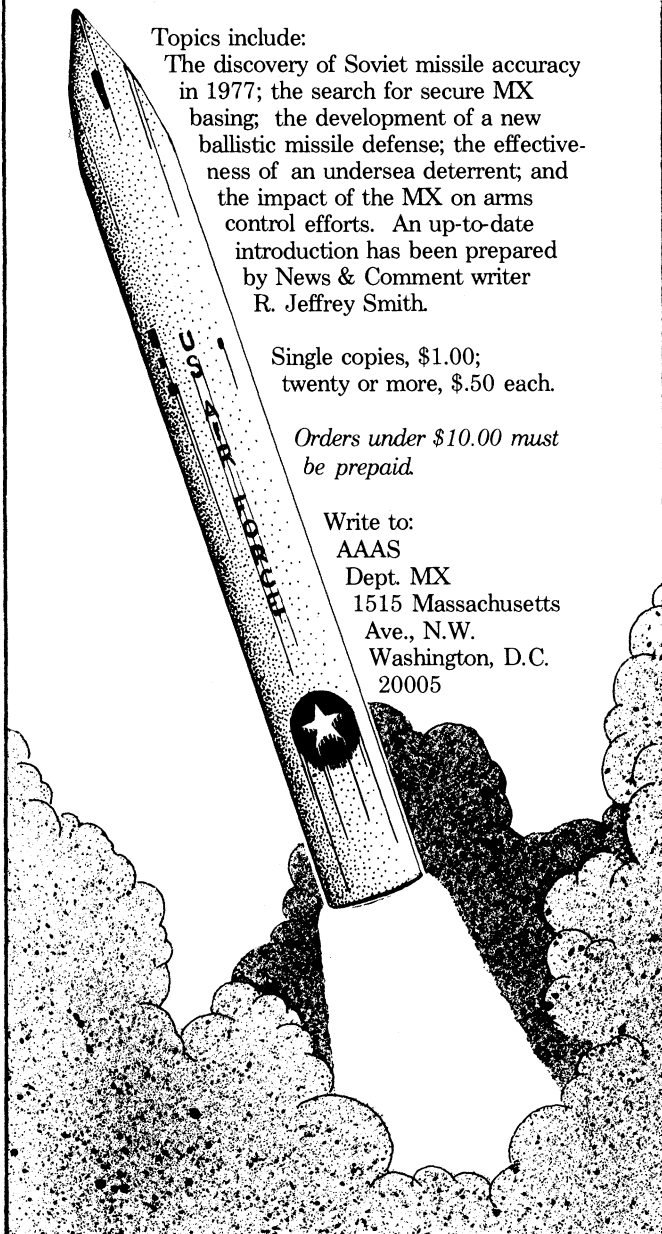
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UNIVERSITY OF MIAMI SCHOOL OF MEDICINE

The Basic Science Departments of the Medical School of the University of Miami are seeking qualified candidates for its **doctoral programs** in the areas of cell biology, biochemistry, neurobiology, microbiology, pharmacology, and physiology. Candidates are also sought for the Cellular and Molecular Biology Program, which is a federally funded training program emphasizing interdisciplinary training.

The Medical School also offers a unique 6-year M.D./Ph.D. program. Stipend levels are set at \$7,500 per annum, with full tuition remission.

The Medical School is located at the University of Miami/Jackson Memorial Medical Center, and is a major center for biomedical research.

Requests for further information and application kits should be addressed in writing to: **Dr. E. Y. C. Lee, Box 016129, Miami, Florida 33101**, with a statement of the programs for which information is requested.

CALL FOR PREPROPOSALS

CALL FOR PREPROPOSALS Field Care of Trauma

The U.S. Army Medical Research and Development Command is interested in receiving applications for support of research concerned with the field care of trauma victims. Field care is meant to include interventions that can be used at the site of an accident and/or during evacuation to a medical facility under highly adverse medical management conditions. The general objectives of the interventions should be to stabilize the victim and reduce morbidity or mortality during the early post-injury stage as well as to improve success of subsequent medical management efforts.

The Army's program in combat casualty care is designed to improve battlefield medical care ranging from diagnosis and triage, to initial resuscitation or treatment, to evacuation and hospital management within the combat theater of operations. Currently, emphasis is placed on medical management problems occurring far-forward of conventional medical treatment facilities.

Interested individuals are encouraged to submit pre-proposal letters briefly outlining the background, objectives, approach, and estimated cost of the proposed research in order to allow a preliminary assessment of the military relevance and program suitability of the effort.

Preproposals and information concerning the submission should be addressed in writing to: **Commander, U.S. Army Medical Research and Development Command, attention: SGRD-RMA (Michael Travis), Fort Detrick, Frederick, Md. 21701.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP IN INSULIN ACTION. M.D. or Ph.D. with background in biochemical or cell biological research interested in working on the mechanism of insulin action. Three major areas of investigation include membrane reactions sensitive to insulin, characterization of the insulin mediator, understanding the mechanism by which the insulin mediators control enzymes. Send curriculum vitae, bibliography, and names of three references to: **Leonard Jarett, M.D., Chairman, Department of Pathology and Laboratory Medicine, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, Pa. 19104.** Opening available after 1 July 1983.

The University of Pennsylvania is an Equal Opportunity Employer.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS, ENVIRONMENTAL TOXICOLOGY

Department of Environmental Health, University of Cincinnati Medical Center, offers postdoctoral fellowships in environmental toxicology. These are NIH-sponsored institutional fellowships. One is available 1 April 1983 and another before 1 July 1983. Preference given to applicants who obtained Ph.D. degree in a basic biomedical discipline. For information, contact: **Dr. P. B. Hammond, Department of Environmental Health (Number 56), University of Cincinnati Medical Center, Cincinnati, Ohio 45267.** *An Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP available at the American Red Cross Blood Services Laboratories. Studies related to blood cells, including membrane fluidity and ultrastructure [*Proc. Natl. Acad. Sci. U.S.A.* **78**, 6246 (1981); *J. Cell Biol.* **95**, 240a (1982)], Dr. Sowers; platelet glycoproteins [*Thromb. Res.* **28**, 103 (1982)] and platelet-tumor cell interactions [*Cancer Res.* **42**, 4348 (1982)], Dr. Jamieson; and platelet storage [*Vox Sang.* **42**, 33 (1982)], Dr. Moroff. Excellent atmosphere for broad blend of basic and applied research. Stipend: \$18,000 to \$22,000 per annum or higher in exceptional cases. Possible regular staff appointment after 2 to 4 years. Send curriculum vitae and three references to: **Dr. G. A. Jamieson, Associate Director, Research and Development, 9312 Old Georgetown Road, Bethesda, Md. 20814.** *Equal Opportunity Employer, M/F.*

RENAL POSTDOCTORAL FELLOWSHIP (physiology, transport, or immunology). Unexpected opening July 1983 for 2 years in very prominent nephrology unit with extensive research programs.

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FELLOWSHIPS available Tennessee 1 July 1984, at St. Jude Children's Research Hospital, Memphis, Tennessee, for physicians or basic scientists: David A. Karnofsky Fellowship for training beyond postdoctoral level in cancer research; J. L. (Dooley) Levy Fellowship for training beyond postdoctoral level in cancer medicine; and Leon J. Journey Fellowship for postdoctoral training in biomedical research. These fellowships are available to a physician or scientist who desires specialized training in one of the many areas of cancer research. Stipends commensurate with experience. Deadline for 1984 applications is 1 August 1983. Decision will be made 1 November 1983. Beginning date is 1 July 1984. For further information, contact: **Director, St. Jude Children's Research Hospital, P.O. Box 318, Memphis, Tenn. 38101.**

THREE POSTDOCTORAL FELLOWSHIPS are available in **protein crystallography, biochemical studies in relation to structures of allosteric enzymes, and theoretical studies related to reaction mechanisms in enzymes and other molecules.**

Applicants may write to: **Professor William N. Lipscomb, Gibbs Chemical Laboratory, Harvard University, Cambridge, Mass. 02138.** *Harvard University is an Affirmative Action/Equal Opportunity Employer.*

GEORGE S. WISE POSTDOCTORAL FELLOWSHIPS

The George S. Wise Faculty of Life Sciences at Tel Aviv University offers **postdoctoral fellowships** commencing 1 October 1983 or 1 April 1984 in basic and applied biology.

The faculty is engaged in such research areas as anatomy, taxonomy and physiology of plants; anatomy, sociobiology and physiology of animals; marine biology; cellular and molecular biology and genetics; lipid and protein research; bioenergetics; neurobiology; immunology; virology; cancer biology; biotechnology and nature preservation. Applications should be sent to: **The Dean, The George S. Wise Faculty of Life Sciences, Tel Aviv University, Tel Aviv 69978, Israel.** They should indicate the area of interest of the applicant and contain complete curriculum vitae, list of publications, title of Ph.D. thesis and name of thesis supervisor, and names of three references.

Deadline for applications is 31 March and 31 October for fellowships commencing 1 October and 1 April, respectively.

FELLOWSHIPS

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP IN NEURAL CONTROL OF THE CARDIOVASCULAR SYSTEM. A limited number of fellowship positions are available, funded by an NIH training grant. Clinical and basic scientists participate in the program with major emphasis on neural pathways, hypertension, cardiovascular pharmacology, exercise, alcoholic heart muscle disease and exercise, electrophysiology, cardiac biochemistry, and biofeedback. The positions are open to U.S. citizens and permanent residents who have Ph.D., M.D., or equivalent degrees in a basic biomedical discipline.

Applicants should send curriculum vitae with three references and specific area of interest to: **Dr. H. Lowell Stone, Department of Physiology and Biophysics, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, Oklahoma 73190.**

We are an Equal Opportunity Employer.

NASA Planetary Biology Summer Internships. The Marine Biological Laboratory, Woods Hole, Massachusetts, invites applications from graduate students and seniors accepted in graduate programs for \$1600 awards to participate in research during the summer. Deadline: 15 April 1983. For information and applications, contact: **John Stolz, Planetary Biology Intern Program, Department of Biology, Boston University, 2 Cummings Street, Boston, Mass. 02115.** *Equal Opportunity/Affirmative Action Institution.*

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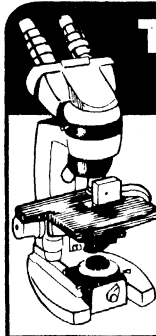
Toronto is a lively, cosmopolitan, safe and clean city. Stipends: predoctoral—\$8900; postdoctoral—\$17,000. Send applications, including curriculum vitae and two reference letters, to:

**Chairman, Department of Medical Genetics
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PRE- AND POSTDOCTORAL TRAINING IN AGING AND THE NERVOUS SYSTEM. A NIA training grant awarded to the Sanders-Brown Research Center on Aging of the University of Kentucky provides support for pre- and postdoctoral fellows to work with a multidisciplinary faculty studying aging and the nervous system. Resources include a new 30,000 square foot building for aging research, EM facilities, and a university-wide commitment to gerontology. Interested applicants should contact: **William R. Markesbery, M.D., Director, Sanders-Brown Research Center on Aging, University of Kentucky, Lexington, Ky. 40536-0230.**

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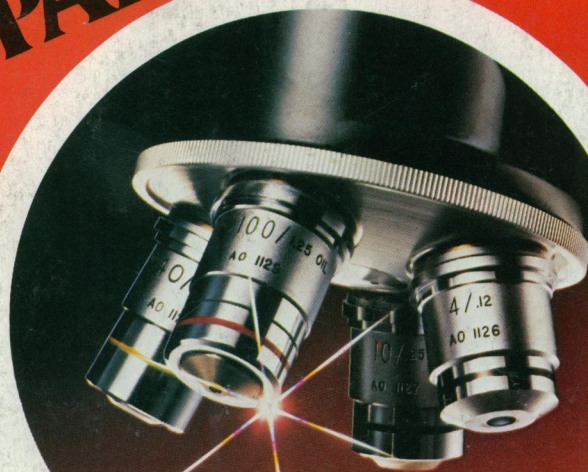
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