

phenomenon, justifies the choice of seabirds for study of the relations between energetics and environmental resource availability.

The first chapter, by Rahn and Whitow, summarizes so effectively the state of knowledge of seabird energetics, breeding biology, population dynamics, and economic relations to the fishing and guano industries that the rest of the book is almost unnecessary. The other chapters are arranged logically from the egg to the population: costs of egg formation and incubation behavior, embryonic growth rates and thermal tolerances, energetics of adult breeding behavior, temperature regulation, flight and terrestrial locomotion, and finally population energetics and impacts on marine resources.

Because research on seabirds began in earnest only 20 years ago and many species spend most of their adult life at sea, where observations of their activities is difficult, some chapters have few data on seabirds to present and rely mainly on studies of other birds, even chickens. Other chapters on more completely studied topics reveal some fascinating differences between seabirds and other species: prolonged incubation periods of Procellariiformes, production of stomach oils for feeding of nestlings, and embryonic and nestling tolerances of periodic feeding and neglect by attending adults. These features, particularly prolonged incubation periods, invite questions concerning the selective pressures underlying their evolution, and I would have liked to see the authors abandon all caution and advance some testable hypotheses.

The construction of ecological models is complicated by a lack of precise measurements on energetics of free-ranging birds and population sizes of both birds and prey and by arguments about the degree of complexity such models require to be accurate. However, the estimates are intriguing and invite further effort. For instance, seabirds may consume about 7.8 million tons of prey each year worldwide and may return annually about 7700 tons of excrement just to the marine system off Newfoundland alone.

Though this book may stimulate few controversies, it provides a solid summary of the state of current knowledge and a stimulus for further research. It should prove informative reading for physiologists, ecologists, ornithologists, and anyone else who enjoys seafood.

CYNTHIA CAREY

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Synthesizing Data

Summing Up. The Science of Reviewing Research. RICHARD J. LIGHT and DAVID B. PILLEMER. Harvard University Press, Cambridge, Mass., 1984. xvi, 191 pp., illus. \$17.50; paper, \$7.95.

Until recently, reviews of social science research on a given subject have been qualitative and judgmental because individual investigations are typically characterized by specific conditions of unknown pertinence to the effect or relationship of interest. In the last decade, however, methods have been developed for systematically integrating the findings of diverse studies. These new procedures—often called meta-analysis—are of vital importance to the scientist, for whom the matter of interpreting prior findings is at least as critical as the task of generating additional results. The productions of such integrative procedures may also be essential to the policy-maker, who in making a decision may need to use simplified accounts of what is known about several research areas. Policy-makers are likely to be concerned primarily with the effects of treatments: surgical, drug, educational, psychotherapeutic, and so on. Others interested in summaries of research on treatments include those who manage treatment programs and those who may be treated by them.

For a problem in social science, the pertinent research literature is usually more diverse than that for one in natural science. There is great variation in procedures, both measuring operations and experimental manipulations or treatments. Hence, with few research studies being replicated very closely, exact reproduction of findings is rare.

Light and Pillemer not only provide an excellent introduction to the new systematic methods for summing up and analyzing bodies of research but also examine the standard qualitative type of review, assessing the strengths and weaknesses of each approach. They recommend a synthesis combining the two. The book provides guidance to professionals who want to undertake research reviews and to policy-makers who must evaluate the adequacy of such reviews. Since they are writing for broad audiences, the authors cannot provide a manual for those undertaking quantitative reviews, but such people can adequately prepare for such a task by using the literature cited. Although the authors occasionally bring up the need for evaluating the quality of the research plan in each research report, they do not include

quality as a possible criterion for excluding reports from a review. (Perhaps they believe there is not enough consensus in such judgments.)

This lucid book has many fine characteristics. The authors stress the analysis of the variation in findings across studies to uncover factors associated with successful and unsuccessful treatments and to seek the boundary conditions for each conclusion drawn. They examine the problem of publication bias: Positive results are more likely to be submitted for publication and published; negative findings may be buried in file drawers. The authors emphasize clear and precise conceptualization, especially in the formulation of the question to which the review is addressed.

Problems of conceptualization and operationalization are pervasive in social science and in the study of treatments. The authors show that reviewers must determine exactly what the treatment was and how much it varied from one study to another. They discuss the matter of multiple outcomes of any treatment, including side effects and immediate versus long-term effects. Neglected, however, is the problem of inferring from an empirical measurement to the conceptualized goal of the treatment. No one index adequately indicates quality of life after heart surgery. No one score is sufficient to assess even one aim of psychotherapy. But what set of measuring operations or what weighted index represents the construal of the desired outcome?

DONALD W. FISKE

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Books Received

Advances in Archaeological Method and Theory. Vol. 7. Michael B. Schiffer, Ed. Academic Press, Orlando, Fla., 1984. xvi, 462 pp., illus. \$49.50.

Advances in Cognitive-Behavioral Research and Therapy. Vol. 3. Philip C. Kendall, Ed. Academic Press, Orlando, Fla., 1984. xiv, 258 pp. \$42.

Aging and Drug Therapy. G. Barbagallo-Sangiorgi and A. N. Exton-Smith, Eds. Plenum, New York, 1984. x, 523 pp., illus. \$85. Ettore Majorana International Science Series (Life Sciences), vol. 15. From a course, Erice, Italy, Nov. 1982.

Alcohol and the Fetus. A Clinical Perspective. Henry L. Rosett and Lyn Weiner. Oxford University Press, New York, 1984. xx, 220 pp. \$24.95.

Annual Reports on Fermentation Processes. Vol. 7. George T. Tsao, M. C. Flickinger, and Robert K. Finn, Eds. Academic Press, Orlando, Fla., 1984. x, 358 pp., illus. Paper, \$42.50.

Annual Review of Microbiology. Vol. 38. L. Nicholas Ornston, Albert Balows, and Paul Baumann, Eds. Annual Reviews, Palo Alto, Calif., 1984. xiv, 613 pp., illus. \$27.

Brainstem Control of Spinal Cord Function. Charles D. Barnes, Ed. Academic Press, Orlando, Fla., 1984. xii, 291 pp., illus. \$49.50. Research Topics in Physiology, 6.

The Catalogue of Fantastic Inventions. Carelman.

(Continued on page 444)

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BOX 10, SCIENCE

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LETTERS

(Continued from page 358)

- Knowledge is reviewed in the National Research Council's report *The Effects on the Atmosphere of a Major Nuclear Exchange* (National Academy Press, Washington, D.C., 1984).
- Fire plume height data are discussed by P. Manins (in preparation). Smoke optical properties are discussed by D. M. Roessler and F. R. Faxvog, in *Opt. Soc. Am.* 69, 1699 (1979); *ibid.* 70, 230 (1980); E. E. Uthe, *Appl. Optics* 20, 1503 (1981); P. Vervisch, D. Peuchberty, T. Mohamed, *Comb. Flame* 41, 179 (1981); and C. W. Bruce and N. M. Richardson, *Appl. Optics* 22, 1051 (1983).
- Satellite observations of smoke plumes are discussed by M. Matson, S. R. Schneider, B. Aldridge, B. Satchwell, in *Fire Detection Using the NOAA-Series Satellites* (NOAA Technical Report NESDIS 7, National Oceanic and Atmospheric Administration, Washington, D.C., 1984).
- H. Wexler, *Weatherwise* 3, 129 (1950).
- L. F. Radke et al., in *Proceedings of the Third WMO Scientific Conference on Weather Modification* (World Meteorological Organization, Clermont-Ferrand, France, 1980), p. 119.
- P. J. Crutzen and J. W. Birks, *Ambio* 11, 114 (1982).
- D. Ball, *Soviet Union* 10, 201 (1983); *Adelphi Paper 185* (International Institute for Strategic Studies, London, 1983).
- A. S. Balayev, Ed., *Firefighting at Installations of the National Economy Under Conditions of Nuclear Destruction* (Voenizdat, Moscow, 1973); A. N. Krylov and V. G. Yushmanko, *Manual for the Firefighting Service of Civil Defense* (Stroyizdat, Moscow, 1981).
- E. Ishikawa and D. L. Swain, *Hiroshima and Nagasaki* (Basic Books, New York, 1981).
- FEMA Attack Manual CPG 2-1A3* (Federal Emergency Management Agency, Washington, D.C., 1982), chapter 3.
- H. L. Brode and R. D. Small, *Fire Damage and Strategic Targeting* (Note 567, Pacific Sierra Research Corporation, Santa Monica, Calif., 1983); S.-W. Kang, T. Reitter, A. Takata, *Analysis of Large Urban Fires* (Paper 85-0457, presented at the Aerospace Sciences Meeting of the American Institute of Aeronautics and Astronautics, Reno, Nev., 1985).
- S. Glasstone and P. J. Dolan, *The Effects of Nuclear Weapons* (U.S. Department of Defense, Washington, D.C., 1977).
- W. L. Woodie, D. Remetch, R. D. Small, *Fire Spread from Tactical Nuclear Weapons in Battlefield Environments* (Note 566, Pacific Sierra Research Corporation, Santa Monica, Calif., 1983).
- The fire area estimate applies to the summer half-year; in winter, the area would be much smaller. The methodology applied here is somewhat more elaborate than in the original TTAPS analysis.
- J. W. Kerr et al., *Nuclear Weapons Effects in a Forest Environment—Thermal and Fire* (Report N2 TR2-70, Defense Nuclear Agency, Washington, D.C., 1971).
- Federation of Atomic Scientists, *Publ. Int. Rep.* 34, 3 (1981); J. E. Hill, *Problems of Fire in Nuclear Warfare* (Report U120869, Rand Corporation, Santa Monica, Calif., 1961).
- W. Seiler and P. J. Crutzen, *Clim. Change* 2, 207 (1980).
- Intense natural forest fires consume up to 35 percent of the forest biomass [H. A. Wright and A. W. Bailey, *Fire Ecology: United States and Southern Canada* (Wiley, New York, 1982)]. Although wildfires also convert up to 6 percent of the burned fuel into smoke [D. V. Sandberg et al., *Effects of Fire on Air* (Technical Report WO-9, U.S. Forest Service, Washington, D.C., 1979)], and although the sudden pyrolysis and rapid burning of large quantities of mixed live and dead fuels are likely to generate even denser smoke (C. K. McMahon, paper presented at the 76th Annual Meeting of the Air Pollution Control Association, Atlanta, Ga., 19 to 24 June 1983), an average smoke emission factor of 4 percent is assumed.
- G. A. Briggs, in *Lectures on Air Pollution and Environmental Impact Analyses*, D. A. Haugen, Ed. (American Meteorological Society, Boston, 1975), pp. 59-111.
- P. Ehrlich et al., *Science* 222, 1293 (1983).
- C. Sagan, *For. Affairs* 62, 257 (1983).
- R. E. Huschke, *The Simultaneous Flammability of Wildlands and Fuels in the United States* (Report RM5073-TAB, Rand Corporation, Santa Monica, Calif., 1966).

BOOKS RECEIVED

(Continued from page 407)

- St. Martin, New York, 1984. 126 pp., illus. Paper, \$9.95. Translated from the French.
- Cell Culture Methods for Molecular and Cell Biology.** David W. Barnes, David A. Sirbasku, and Gordon H. Sato, Eds. Liss, New York, 1984. Four volumes. Vol. 1, Methods for Preparation of Media, Supplements, and Substrata for Serum-Free Animal Cell Culture. xxiv, 353 pp., illus. \$49.50. Vol. 2, Methods for Serum-Free Culture of Cells of the Endocrine System. xvi, 255 pp., illus. \$39.50. Vol. 3, Methods for Serum-Free Culture of Epithelial and Fibroblastic Cells. xx, 291 pp., illus. \$49.50. Vol. 4, Methods for Serum-Free Culture of Neuronal and Lymphoid Cells. xvi, 263 pp., illus. \$39.50.
- Diffusion in Crystalline Solids.** Graeme E. Murch and Arthur S. Nowick, Eds. Academic Press, Orlando, Fla., 1984. xviii, 484 pp., illus. \$73. Materials Science and Technology Series.
- Disorders of Articulation.** Aspects of Dysarthria and Verbal Dyspraxia. Margaret Edwards, Springer-Verlag, New York, 1984. x, 134 pp., illus. \$25. Disorders of Human Communication 7.
- Do-It-Yourself Medical Testing.** More than 160 Tests You Can Do at Home. Cathey Pinckney and Edward R. Pinckney. Illustrations by the authors. Facts On File, New York, 1984. xxii, 290 pp. Paper, \$7.95. Reprint, 1983 ed.
- Early Brain Damage.** C. Robert Almli and Stanley Finger, Eds. Academic Press, Orlando, Fla., 1984. Two volumes. Vol. 1, Research Orientations and Clinical Observations. xx, 368 pp., illus. \$49.50. Vol. 2, Neurobiology and Behavior. xx, 387 pp., illus. \$49.50. Behavioral Biology.
- Ecology of Saprotrophic Fungi.** R. C. Cooke and A. D. M. Rayner. Longman, New York, 1984. xiv, 415 pp., illus. \$50.
- An Economic Analysis of Crime and Justice.** Theory, Methods, and Applications. Peter Schmidt and Ann D. Witte. Academic Press, Orlando, Fla., 1984. xiv, 418 pp. \$60. Quantitative Studies in Social Relations.
- Guide to Clinical Studies and Developing Protocols.** Bert Spilker. Raven, New York, 1984. xviii, 302 pp., illus. \$45.
- Handbook of Applicable Mathematics.** Walter Ledermann, Ed. Vol. 6, Statistics. Emyln Lloyd, Ed. Wiley-Interscience, New York, 1984. Two volumes. xlii, 942 pp., illus. + appendixes. Each volume, \$85.
- Hazardous and Toxic Materials.** Safe Handling and Disposal. Howard H. Fawcett. Wiley-Interscience, New York, 1984. xiv, 296 pp., illus. \$35.
- Health Care and Human Behaviour.** Andrew Step-toe and Andrew Mathews, Eds. Academic Press, Orlando, Fla., 1984. xii, 347 pp. \$47.50.
- Herpes Diseases and Your Health.** Henry H. Bal-four, Jr., and Ralph C. Heussner. University of Minnesota Press, Minneapolis, 1984. xii, 196 pp., illus. \$14.95.
- High-Voltage Engineering.** Fundamentals. E. Kuf-fel and W. S. Zaengl. Pergamon, New York, 1984. x, 498 pp., illus. Paper, \$17.50. Applied Electricity and Electronics.
- The Idea of Economic Complexity.** David Warsh. Viking, New York, 1984. xxviii, 222 pp., illus. \$16.95.
- IgA Mesangial Nephropathy.** G. D'Amico, L. Min-etti, and C. Ponticelli, Eds. Karger, Basel, 1984. x, 308 pp., illus. \$97.75. Contributions to Nephrology, vol. 40. From a meeting, Milan, Oct. 1983.
- IGARSS '84.** Remote Sensing—From Research Towards Operational Use. European Space Agency, Paris, 1984. Two volumes. xxiv, 880 pp., illus. Paper, \$70. ESA SP-215. From a symposium, Stras-bourg, Aug. 1984.
- Illustrated Dictionary of Mechanical Engineering.** English, German, French, Dutch, Russian. V. V. Schwartz et al. Nijhoff, The Hague, 1984 (U.S. distributor, Kluwer Boston, Hingham, Mass.). 424 pp. \$49.50.
- Imagery and Consciousness.** Peter E. Morris and Peter J. Hampson. Academic Press, Orlando, Fla., 1983. x, 341 pp., illus. \$36.50.
- Inclusion Compounds.** Vol. 1, Structural Aspects of Inclusion Compounds Formed by Inorganic and Organometallic Host Lattices. J. L. Atwood, J. E. D. Davies, and D. D. MacNicol, Eds. Academic Press, Orlando, Fla., 1984. xiv, 420 pp., illus. \$70.
- Individual Susceptibility to Genotoxic Agents in the Human Population.** Frederick J. de Serres and Ronald W. Pero, Eds. Plenum, New York, 1984. x, 518 pp., illus. \$69.50. Environmental Sciences Re-search, vol. 30. From a workshop, Research Trian-gle Park, N.C., May 1982.
- John Deere's Company.** A History of Deere and Company and Its Times. Wayne G. Broehl, Jr. Doubleday, New York, 1984. xvi, 870 pp., illus., + plates + index. \$24.95.
- Laboratory Guide to Insect Pathogens and Para-sites.** George O. Poinar, Jr., and Gerard M. Thomas.

Staying Alive. The Psychology of Human Survival. Roger Walsh. New Science Library (Shambhala), Boulder, Colo., 1984 (distributor, Random, New York). xxii, 124 pp. Paper. \$5.95.

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Research Technician with broad experience in immunology, molecular biology, hybridization techniques, and cellular biology offers assistance in an American research laboratory (preferably). Reply to Jeroen Knops, Institute of Immunology and Genetics, German Cancer Research Center, Im Neuenheimer Feld 280, D-6900 Heidelberg, Federal Republic of Germany. X

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ASSISTANT PROFESSOR: The Department of Zoology, The Ohio State University, invites applications for a 9-month, tenure-track position in **ANIMAL BEHAVIOR** beginning autumn 1985. Persons with interests in evolutionary, genetic, or physiological aspects of animal behavior are encouraged to apply; postdoctoral experience desirable. The successful candidate will be expected to develop a vigorous research program and contribute to teaching programs in biology, zoology, and behavior. Deadline for applications is 6 weeks after the appearance of this ad. Send résumé and three letters of recommendation to: **Dr. John L. Crites, Chairman, Department of Zoology, The Ohio State University, 1735 Neil Avenue, Columbus, Ohio 43210.**

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Research faculty position available at the University of Kentucky, Division of Neurosurgery. Candidate should hold Ph.D. in physiology, pharmacology, or related field. Candidate will continue and expand established laboratory investigation of factors contributing to the pathogenesis of focal and global cerebral ischemia. Applicants should submit curriculum vitae and three names for references to: **Robert J. Dempsey, M.D., Division of Neurosurgery, University of Kentucky, College of Medicine, 800 Rose Street, Lexington, Kentucky 40536. The University of Kentucky is an Equal Opportunity Employer.**

ASSISTANT PROFESSOR: The Department of Zoology, The Ohio State University, invites applications for a 9-month, tenure-track position in **INVERTEBRATE BIOLOGY** beginning autumn 1985. Persons with interests in physiology of invertebrates are encouraged to apply; postdoctoral experience is desirable. The successful candidate will be expected to develop a vigorous, supported research program and contribute to teaching programs in biology, zoology, and invertebrate zoology. Deadline for applications is 6 weeks after appearance of this ad. Prospective candidates should forward a letter stating their teaching and research interests and objectives, current curriculum vitae, and three letters of recommendation to: **Dr. John L. Crites, Chairman, Department of Zoology, The Ohio State University, 1735 Neil Avenue, Columbus, Ohio 43210.**

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**Dr. Thomas C. Westfall
Professor and Chairman
Department of Pharmacology
St. Louis University School of Medicine
1402 South Grand Boulevard
St. Louis, Mo. 63104**

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CARDIOVASCULAR SCIENTIST

The position of cardiovascular scientist will have an appointment in an appropriate academic department and the Tobacco and Health Research Institute. The principal responsibility and activity of the faculty member will be to lead and engage in research concerning the mechanisms involved in smoking-related physiologic, pharmacologic, pathologic, or biochemical effects on the cardiovascular system. Although some experience with smoking-related research is desirable, it is not a requirement for this position. In association with the joint appointment, it is anticipated that the faculty member will maintain close contact with his/her academic department and may engage in teaching and/or clinical activities of that department to a limited degree.

It is expected that the faculty member will maintain a vigorous research program as evidenced by quality publications, success in obtaining extramural funding, and participation in appropriate forums at the national and international level with respect to smoke-related investigations. Within the College of Medicine and other medical center colleges, the opportunity for collaboration with active investigators in cardiovascular pharmacology, cardiovascular physiology, clinical cardiology, cardiovascular surgery, and others involved in smoke-related research is available and will be encouraged.

Applications are invited from established scientists for this position. The thrust of this position will be to engage in basic and/or clinical research related to the possible effects of tobacco smoke on physiologic, pathologic, pharmacologic, and biochemical aspects of the cardiovascular system. Candidates must have a Ph.D., M.D., or D.V.M. degree and qualification for appointment at the level of either associate or full professor. Potential long-term financial support for salary and significant investigational funds is included with the position. Please send curriculum vitae, list of professional references, and outline of research interest to: **Edward P. Todd, M.D., Ph.D., Chairman, Cardiovascular Search Committee, Division of Cardiovascular and Thoracic Surgery, Department of Surgery, University of Kentucky Medical Center, 800 Rose Street, Lexington, Kentucky 40536. Affirmative Action/Equal Opportunity Employer.**

Senior Investigator Scale-up of Mammalian Cell Culture

The Department of Natural Products Pharmacology is looking for an outstanding scientist to establish a new group concerned with developing large-scale mammalian cell culture techniques. This group will apply state-of-the-art systems to the scale-up of processes for new biopharmaceutical products under development at SK&F, such as tissue plasminogen activator (TPA), as well as undertaking innovative research designed to improve upon this emerging technology.

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- be responsible for the provision of supplies of mammalian cell products to research programs and development projects.
- continue development of pilot plant capabilities in mammalian cell cultures.

Candidates are required to have:

- a Ph.D in Biochemical Engineering or Cell Biology.
- three to six years postdoctoral experience in academia or industry.
- course work and research experience in cell biology or related subjects.
- experience of tissue culture techniques, suspension culture, microcarrier systems and/or immobilized cell reactors.
- a sound publication record and a strong reputation in subjects related to cell culture.
- knowledge of the hydrodynamic and physical-chemical factors important to the scale-up of fermentors for growing mammalian cells.

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structural molecular biology

at DESY in Hamburg.

The new groups will be set up as outstations of institutes of the Max-Planck-Gesellschaft for the purpose of applying synchrotron radiation available at DESY to problems in structural biology. Cooperation with the existing outstation of EMBL at DESY will be possible.

Three group leaders are sought, who should be highly qualified scientists. They will be given full freedom to carry out independent research. The initial contract will be limited to five years on the German university salary scale C 3.

Applications including curriculum vitae, a list of publications and a summary of past and planned research should be submitted by March 15, 1985, to the **President of the Max-Planck-Gesellschaft, Residenzstrasse 1a, 8000 Munich, Federal Republic of Germany.**

MARINE BIOLOGICAL LABORATORY Woods Hole, Massachusetts

Announces Two New Courses

Marine Phytoplankton Ecology and Physiology August 4 — 31, 1985.

Randall Alberte (Chicago), Director. Instructors: Barbara Prezelin (UC, Santa Barbara); Jane Gallagher (CUNY, City College); Salle Chisholm (MIT); and Hans Paerl (North Carolina).

Molecular and Cellular Immunology for Non Immunologists August 18 — 31, 1985.

Carol Reinisch (Tufts), Director. Instructors: D. Wilson and R. Schwartz (New England Medical Ctr.); G. Sunshine (Tufts); and P. Kincaid (Oklahoma Research Foundation).

Deadline for applications: April 1, 1985

For further information, contact the Office of Grants and Educational Services, MBL, Woods Hole, MA 02543 (617) 548-3705 x 216.

POSITIONS OPEN

ASSISTANT PROFESSOR OF MEDICINE (IMMUNOLOGY/ALLERGY). The University of Tennessee Center for Health Sciences, Department of Medicine, Division of Allergy/Immunology, invites applications from individuals with a strong research, patient care, and teaching background. Should have completed training in medicine and allergy/immunology. Send curriculum vitae to: **Dr. T. J. Yoo, Professor and Head, Division of Allergy/Immunology, Department of Medicine, University of Tennessee Center for Health Sciences, 956 Court Avenue, Room 3H05, Memphis, Tenn. 38163.** *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR— TUMOR VIROLOGIST University of North Carolina at Chapel Hill

The Department of Microbiology and Immunology and the Cancer Research Center at the University of North Carolina at Chapel Hill (UNC-CH) invite applications for a tenure-track faculty position for a tumor virologist studying issues relevant to human cancer. We seek a candidate with demonstrated ability to conduct an independent research program in oncogenic molecular virology and who will participate in the teaching of graduate and medical students. Applicants should send their curriculum vitae and the names and addresses of three references to: **John Newbold, Department of Microbiology, Faculty Laboratory Office Building 231H, UNC-CH School of Medicine, Chapel Hill, N.C. 27514.** *The University of North Carolina is an Affirmative Action/Equal Opportunity Employer.*

BIOCHEMICAL EPIDEMIOLOGIST

For research program in carcinogenesis and molecular biology. Clinical and laboratory dimensions Ph.D. level with relevant biochemical and epidemiological experience. Excellent working conditions. Available immediately. Send curriculum vitae and salary requirements to:

**Preventive Medicine Institute/Strang Clinic
55 East 34 Street
New York, N.Y. 10016
Attention: Dr. Daniel G. Miller**

THE COLLEGE OF STATEN ISLAND CITY UNIVERSITY OF NEW YORK (CUNY)

BIOLOGY FACULTY POSITION

Full-time, tenure-track position for biologist with proved research ability and commitment. Ph.D. required; teaching experience, grant activity, and knowledge of genetics desirable. Salary and rank commensurate with experience, background, and professional qualifications. Liberal CUNY fringe benefits. Position available September 1985.

Send résumé and names of references by 15 February 1985 to:

**Dr. Barry Bressler, Dean of Faculty
The College of Staten Island/CUNY
715 Ocean Terrace
Staten Island, New York 10301**

*An Equal Opportunity/
Affirmative Action Employer*

BOTANIST. Tenure-track faculty position. Desired research emphasis in ecological/evolutionary genetics. Will teach courses in introductory botany, population genetics, and area of specialty. Expected to advise graduate students and develop active research program with some relevance to northern regions. Applicants must have earned Ph.D., post-doctoral experience preferred.

Applicants should forward a letter of application, curriculum vitae, copies of publications, and three letters of reference by 28 February 1985 to:

**W. S. Armbruster, Chairman
Botany Search Committee
Department of Biology, Fisheries and Wildlife
University of Alaska-Fairbanks
Fairbanks, Alaska 99701**

The University of Alaska is an Equal Opportunity/Affirmative Action Employer and Educational Institution.

POSITIONS OPEN

For September 1985: Two tenure track positions in the **DEPARTMENT OF BIOLOGY** of Yeshiva College and Stern College for Women, the undergraduate liberal arts colleges of Yeshiva University. Candidates must be able to teach general biology and courses from among anatomy, histology, embryology, animal physiology, and genetics. Commitment to undergraduate teaching is essential and an active research program is expected. Inquiries should be received by 15 February. *Equal Opportunity Employer.*

**Dr. Fred Goodman
Stern College for Women
245 Lexington Avenue
New York, N.Y. 10016**

CELL BIOLOGIST

Applications are invited for a cell biologist (platelets, leukocytes) to join a research group specializing in the areas of hemostasis and inflammation. Position available is for an assistant member (assistant professor) at the Oklahoma Medical Research Foundation. Applicants should have at least 3 years of postdoctoral training and hold the Ph.D. or M.D. degree(s). They should exhibit demonstrated ability in establishing a strong independent research program in the area of hemostasis or inflammation/plasma protein chemistry. Institutional funds are available to supplement grant and contract support. Send curriculum vitae (including bibliography) together with names of three references to: **Dr. Fletcher B. Taylor, Jr., Head, Thrombosis/Hematology Research Program, Oklahoma Medical Research Foundation, 825 Northeast 13 Street, Oklahoma City, Okla. 73104.** Telephone: 405-271-2400.

THE ZOOLOGY DEPARTMENT AT THE UNIVERSITY OF ARKANSAS, MAIN CAMPUS FAYETTEVILLE, is seeking applicants for **CHAIR** at associate professor level. We expect to fill position by 1 July 1985. Zoology Chair Search Committee will begin reviewing applicants 1 March. The department is multidisciplinary, 15 faculty positions, 50 graduate students, 500 undergraduate majors, campus of 15,000 students. Qualifications of applicant should include: Active research program, record of successful research funding, skilled teacher of graduate and undergraduate students. Field of research not specified. Administrative experience desired. Funding available for successful candidate to establish his/her research program on Fayetteville campus. Applicants should provide complete résumé and three letters of reference to: **Professor James E. Dunn, Chair, Zoology Faculty Chair Search Committee, Department of Mathematical Sciences, SCEN 301, University of Arkansas, Fayetteville, Ark. 72701.** *University of Arkansas is an Equal Opportunity/Affirmative Action Employer.*

COGNITIVE PSYCHOLOGY, assistant professor: The Department of Psychology at Lehigh University will hire a cognitive psychologist for a tenure-track position beginning fall 1985. The particular area of expertise is less important than the overall quality of the candidate. We expect the candidate to teach both graduate and undergraduate level courses primarily in cognition, to maintain an active research program, and to supervise doctoral research. Send curriculum vitae, three letters of recommendation, and representative papers to: **Martin L. Richter, Acting Chairperson, Department of Psychology, Building 17, Lehigh University, Bethlehem, Pennsylvania 18015.** Applications received on or before 1 March 1985 will be given first consideration. *Lehigh University is an Equal Opportunity/Affirmative Action Employer.*

DIRECTOR SHANNON POINT MARINE CENTER WESTERN WASHINGTON UNIVERSITY

Western Washington University seeks an established marine scientist to become the full-time director of its Shannon Point (Puget Sound) Marine Center starting 1 September 1985. Candidates for director must possess a strong research record and proven administrative ability in marine science. A Ph.D. in a marine related area and academic experience equivalent to the full professor rank is preferred. Faculty status is negotiable. Salary is competitive. Please submit curriculum vitae and a minimum of three letters of reference by 1 March 1985 to: **Dr. Maurice L. Schwartz, Chairman, SPMC Director Search Committee, Environmental Studies Building, Western Washington University, Bellingham, Wash. 98225.** *Western Washington University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

CONDENSED MATTER FACULTY POSITION

The Department of Physics, Arizona State University (ASU), invites applications for a tenure-track applied physics position at the assistant professor level. Applicants should have research interests related to the structure and the electronic or magnetic properties of solids (including novel materials, semiconductors, and biological polymers). Current activities within the department include surface research with ion beam interactions, SIMS and electron scattering (electron energy loss spectroscopies, electron diffraction, and microscopy); studies of magnetic materials with a SQUID magnetometer, multilayer evaporation, x-ray scattering, EXAFS, EPR and NMR; light scattering, including Raman and picosecond spectroscopies.

A Ph.D. in physics and experience in a relevant research area are required. Applications, including curriculum vitae, bibliography, and three letters of recommendation, should be sent before 1 April 1985 to: **Dr. J. M. Cowley, Department of Physics, Tempe, Arizona 85287.** *ASU is an Equal Opportunity/Affirmative Action Employer.*

DEAN FACULTY OF NATURAL SCIENCES AND MATHEMATICS STATE UNIVERSITY OF NEW YORK (SUNY) AT BUFFALO

SUNY/Bufalo, the largest most comprehensive unit of the state university system, seeks a dean for its Faculty of Natural Sciences and Mathematics. The faculty comprises 269 full-time persons in the Departments of Biological Sciences, Chemistry, Computer Science, Geological Sciences, Mathematics, Physics, and Statistics which offer degree programs from baccalaureate through doctoral levels. The dean will be expected to provide effective academic leadership, stimulate the strengthening and development of research, teaching, and service activities, and be responsible for effective management of personnel and budget resources. Candidates should have demonstrated a commitment to scholarly excellence and qualify for a tenured full professor appointment in one of the above disciplines. *Women and minority candidates are encouraged to apply.*

Forward nominations and applications by 15 March 1985 to: **Dr. Donald W. Rennie, Search Committee Chair, SUNY/Bufalo, 521 Capen Hall, Buffalo, New York 14260.**

SUNY/Bufalo is an Equal Opportunity/Affirmative Action Employer.

EVOLUTIONARY/ECOLOGICAL GENETICIST

The Department of Biology at Washington University is seeking an individual with research expertise in evolutionary or ecological genetics. Preference will be given to those working with vertebrates, although the research organism is less important than having strong credentials for, and commitment to, developing an independent research program which will interface with the strong programs in developmental biology, molecular biology, or plant biology currently existing within the department. An interest in, and aptitude for, teaching undergraduate and graduate students is of equal importance. The position can be at any faculty rank but preference will be given individuals at the assistant professor level. Interested individuals should send curriculum vitae and a letter indicating past, current, and future research interests, and arrange to have three letters of reference sent to: **Alan R. Templeton, Chairperson of the Search Committee, Department of Biology, Box 1137, Washington University, St. Louis, Mo. 63130.** *An Equal Opportunity/Affirmative Action Employer.*

IOWA

The University of Iowa, College of Dentistry, is presently conducting a search to fill a full-time **FACULTY POSITION** in the Dows Institute for Dental Research with major responsibilities for research and teaching in the newly established Specialized Caries Research Center. The position will be available 1 July 1985; screening will begin immediately. Applicants must have D.D.S. and/or Ph.D. A research interest augmenting present research activities of Institute faculty is desirable, for example, microbiology and/or immunology and/or salivary biochemistry. Academic rank and salary will be commensurate with qualifications and experience. Letters of application should be submitted to: **Dr. Brian H. Clarkson, Dows Institute for Dental Research, University of Iowa, College of Dentistry, Iowa City, Iowa 52242.** *The University of Iowa is an Equal Opportunity/Affirmative Action Institution.*

DIRECTOR
Supercomputer Institute
The University of Minnesota

The University of Minnesota invites applications and nominations for the position of Director of the Supercomputer Institute. This Institute is a newly formed, developing University-wide unit, to be operated under the aegis of the Institute of Technology (which encompasses the mathematical and physical sciences, engineering, and architecture). The Supercomputer Institute is to be the center of academic instructional and research activities in large scale computing in architecture, in the sciences (mathematical, physical, biological, and social), and in the engineering disciplines. The Institute will also be intimately involved in University-industry-government cooperative research (both basic and applied) and will be a center for access to several supercomputers of diverse architectures available to the U.S. research community under NSF and other federal agencies' sponsorship.

The successful candidate will be one who brings to the position an appropriate combination of successful scientific leadership in supercomputing, a record of administrative accomplishments, and the ability to lead large and complex technical activities. Depending on the qualifications of the candidate, appropriate appointment to faculty rank and tenure in a department of the University is envisioned.

Applications must include an expression of interest in the position, an up-to-date curriculum vitae, and the names and addresses of professional references.

Applications and nominations may be directed to:

Professor Thomas F. Walsh
School of Physics and Astronomy
148 Physics
116 Church Street NE
Minneapolis, MN 55455

Deadline for receipt of applications is January 31, 1985.

The University of Minnesota is an equal opportunity educator and employer and specifically invites and encourages applications from women and minorities.

**Postdoctoral
Scientists**

Several positions are available for postdoctoral scientists to undertake research projects involving natural products. The projects include total synthesis, biosynthesis, and structural studies. The successful candidates must have a Ph.D. in organic chemistry and appropriate training and experience in at least one of the aforementioned research areas.

Research will be undertaken in the Department of Analytical/Physical and Structural Chemistry which provides an excellent research environment and facilities. The laboratories are equipped with modern instrumentation including 500 MHz NMR, MS with FAB, x-ray diffraction facilities, FT-IR and an ENS Computer Graphics Molecular Modeling system.

Although the initial assignment is in Philadelphia, the Department will be relocating to a new, state-of-the-art research facility near Valley Forge in 1985.

Postdoctoral appointments are one year assignments, renewable for a second year upon mutual agreement.

We offer an excellent salary, benefits, and relocation package. Please forward your C.V. to George P. Kissell, Sr. Employment Consultant, SK&F Laboratories, 1574 Spring Garden Street, Philadelphia, PA 19101.

We are an Equal Opportunity Employer, M/F/H/V

SK&F
A SmithKline Beckman Company

Skin Research

ALZA Corporation, pioneer and leader in drug delivery systems, is expanding its research commitment to further our understanding of skin biology. We are looking for a talented, well trained PhD with background and expertise in skin biology and biochemistry. The ideal candidate will have worked with cell cultures and metabolism, and will also be familiar with physical-chemical measurements of skin properties. Understanding of biological and clinical aspects of the skin's response to topical agents is especially desirable. Knowledge of immunology is useful, but not essential.

The individual chosen for this new position will be interested in, and capable of establishing and maintaining a productive research laboratory in skin biology, and will possess excellent oral and written communication skills.

Salary and rank are commensurate with background and experience. ALZA encourages and provides an excellent environment for internal and external professional growth. We offer an outstanding benefits package, including 3 weeks' vacation the first year. Send your resume to: ALZA, Employment Dept., Attn: Darlene Markovich, 950 Page Mill Road, P.O. Box 10950, Palo Alto, CA 94303-0802. We are an equal opportunity employer.

alza

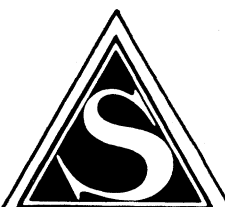
ANALYTICAL CHEMIST PHARMACEUTICAL DEVELOPMENT

Sandoz, Inc. is responsible for pharmaceutical products that improve the quality of life. Our developments are the result of research conducted by professionals who specialize in many different fields.

Currently we seek a staff analytical chemist for methods development, analysis and validation of chromatographic methods. Position requires supervision of other analysts, transfer of validated methods to other labs and the ability to do independent research to solve problems. Responsibilities include the isolation and identification of degradation products which arise from stability programs.

The ideal candidate should possess a Ph.D. in analytical chemistry with a strong background in organic chemistry. Experience with state-of-the-art chromatographic methods as well as a working knowledge of spectroscopic techniques and methods validation. Good communication skills are essential.

Positions at Sandoz offer personal satisfaction, professional opportunity/challenge, competitive salaries and excellent company-paid benefits. Our campus-like facilities are conveniently located in Northern New Jersey. For prompt consideration, please forward your resume and salary requirements to:



Personnel Manager
SANDOZ, INC.
Sandoz Research Institute
Route 10 (403-1)
East Hanover, NJ 07936
Equal Opportunity Employer M F

POSITIONS OPEN

DIRECTOR ALASKA WAMI MEDICAL PROGRAM

The University of Alaska, Fairbanks, solicits applications for the directorship of the Alaska component of the WAMI (Washington, Alaska, Montana, Idaho) regionalized medical school program. The director administers the first year medical school curriculum in coordination with the University of Washington School of Medicine. He/she will teach, promote and participate in research, counsel medical students, and work with faculty and staff to assure excellence of departmental programs. Qualifications include: Ph.D. or M.D., demonstrated experience in teaching basic medical science, record of independent research, ability to obtain extramural funding, and academic administrative ability. There will be a tenure-track appointment with the University of Alaska, Fairbanks; appointments with the University of Washington as assistant dean and faculty member of an appropriate department. Salary commensurate with qualifications and experience. Submit letter of application, résumé, and three references to: Chair, WAMI Search Committee, c/o Dean, College of Natural Sciences, 122 Arctic Health Research Building, University of Alaska, Fairbanks, Alaska 99701. Application deadline 1 March 1985 (postmark date). *The University of Alaska-Fairbanks is an Equal Opportunity/Affirmative Action Employer and Educational Institution and encourages women and minorities to apply for this position.*

LEARNING RESOURCES DIRECTOR

The West Virginia School of Osteopathic Medicine (WVSOM) invites applications and nominations for the position of learning resources director.

The director of the Learning Resources Center should be an experienced educator, capable of assisting faculty and others in being more effective educational leaders. Background experience should include utilization of learning resources such as library, audio visuals, graphic arts, interactive video, and computer assisted instruction. The director will assist the Dean for Academic Affairs in constructing appropriate means for evaluating academic programs and faculty.

QUALIFICATIONS: An earned doctorate, D.O., Ph.D., or Ed.D., experienced in modern instructional methods and faculty counseling, preferably at a medical school. The director need not be a librarian, but should have considerable experience in library management.

SALARY: Salary and academic rank (tenure track) commensurate with experience and credentials.

APPLICATIONS: Interested persons are requested to send a letter of application, curriculum vitae, and three letters of reference by 1 March 1985 to:

Harry P. Kornhiser, D.O.
Dean for Academic Affairs
West Virginia School of Osteopathic Medicine
400 North Lee Street
Lewisburg, West Virginia 24901

WVSOM is an Affirmative Action/Equal Opportunity Employer.

MOLECULAR CELL BIOLOGISTS

The Department of Cell and Tumor Biology at Roswell Park Memorial Institute in Buffalo, New York, intends to hire two or three outstanding scientists at the junior and/or senior faculty level. We are looking for individuals with demonstrated ability to conduct active research programs in molecular aspects of cell biology, to teach at the graduate level, and to interact productively with colleagues. Salary will be determined by level of experience. Start-up funds are available.

Roswell Park Memorial Institute is the world's oldest cancer research institute. In addition to supporting research into the causes, treatment, and prevention of cancer, the Institute also supports research into various aspects of basic biology. Current research in the Department of Cell and Tumor Biology is devoted to understanding eukaryotic regulatory mechanisms at a molecular level. We are particularly interested in the regulatory roles of nuclear structure, chromatin, specific DNA sequence elements, intracellular and extracellular molecules, and oncogene products.

If interested, please send your curriculum vitae, description of research plans, and the names of three references by 1 March 1985 to: Dr. Mary Woodworth, Search Committee Chairperson, Department of Cell and Tumor Biology, Roswell Park Memorial Institute, Buffalo, New York 14263. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FACULTY POSITION. Immunology and immunocytogenetics, tenure-track, 12-month position, assistant or associate professor. Opportunity to expand research and service programs in immunocytogenetics, immunocompetence, and immunopotentiators in horses; team teaching graduate immunology courses, guidance of graduate students. Applicants have a Ph.D. or D.V.M., with advanced degree, or experience in immunocytogenetics. Salary competitive. Application closing date: 1 April 1985, or until candidate is found. Send application, curriculum vitae, statement of research interest and abilities, career goals, and addresses of three referees to: J. Storz, Head, Department of Veterinary Microbiology and Parasitology, School of Veterinary Medicine, Louisiana State University, Baton Rouge, La. 70803. *Equal Opportunity Employer.*

GROSS ANATOMIST

Experienced educator sought to direct medical gross anatomy course beginning in fall 1985. We seek a dedicated teacher who is interested in providing an outstanding educational opportunity for medical students, graduate students, and postgraduates. Implementation of modern teaching tools is desirable. Open rank. A research interest in medical education, anthropology, cell biology, or neuroscience is beneficial. Forward curriculum vitae and the names of three potential referees to:

Dr. John R. Sladek, Jr.
Professor and Chairman
Department of Anatomy
University of Rochester
School of Medicine & Dentistry
601 Elmwood Avenue
Rochester, New York 14642
Equal Opportunity Employer, M/F

INTERFERON BIOLOGY MECHANISM OF ANTITUMOR EFFECTS

Postdoctoral fellow (M.D. or Ph.D.) appointments for individuals interested in *in vitro* and *in vivo* effects of human interferons. Research laboratories collaborating on the program are investigating effects of interferons on immune function, cell proliferation, enzyme induction, and cell surface alterations. Participating faculty includes L. A. Ball, Ph.D. (2-5A synthetase), E. C. Borden, M.D. (NK cells), P. M. Sondel, M.D., Ph.D. (T cells), D. Paulnock, Ph.D. (macrophages), J. Willson, M.D. (antiproliferative effects), M. Gould, Ph.D. (radiation effects), E. Shrago, M.D. (lipoproteins), and G. T. Bryan, M.D., Ph.D. (chemical carcinogenesis). Participants will work with individual faculty on common research interests and participate in core seminars. Résumés and letters of reference to: Ernest C. Borden, M.D., University of Wisconsin Clinical Cancer Center, K4/414, 600 Highland Avenue, Madison, Wisconsin 53792.

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

POSTDOCTORAL POSITION HARVARD MEDICAL SCHOOL

An immediate opening for a recent Ph.D. in immunology with expertise in hybridoma technology. Candidate will work independently within a multidisciplinary group in the Department of Nuclear Medicine. Research involves the production of monoclonal antibodies and their use as carriers of radionuclides for diagnosis and therapy. Salary: \$18,000. Please contact: Dr. A. I. Kassis, Shields Warren Radiation Laboratory, 50 Binney Street, Boston, Mass. 02115; telephone: 617-732-2185.

POSTDOCTORAL POSITION available fall 1985 to study actin-membrane interactions in cell movement, endocytosis, and adhesion. Experience in membrane biochemistry or motility is a plus, but the major requirements are creativity, intelligence, and a capacity for hard work. Salary dependent on training and experience. Send curriculum vitae and names of three references to: Dr. E. J. Luna, Department of Biology, Princeton University, Princeton, N.J. 08544. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to isolate and characterize sugar transport proteins from yeast plasma membranes. Experience in membrane or protein isolation procedures desirable but not essential. Send curriculum vitae and the names of three references to: Dr. Vincent P. Cirillo, Department of Biochemistry, State University of New York (SUNY), Stony Brook, N.Y. 11794. *SUNY is an Affirmative Action/Equal Opportunity Educator and Employer.* AK 331.

POSITIONS OPEN

MOLECULAR GENETICIST. Assistant professor. Department of Animal Science, University of Minnesota, St. Paul, to develop molecular genetic/gene transfer systems in mammalian farm animals or ruminant bacteria; teach and advise in area of specialization; 12-month, tenure-track appointment. Required: Ph.D. in a biological science, research in molecular genetics and recombinant DNA technology. Desired: Training in genetics, immunology, embryology, or cell biology and technical competence in microscopy, microinjection, cytogenetics, and cell culture. Submit curriculum vitae with publication record, transcripts, and research interest, and have three reference letters sent by 15 March 1985 to: Dr. Keven S. Guise, 495 AnSc/VM, University of Minnesota, St. Paul, Minn. 55108. Telephone: 612-376-5673. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

MOLECULAR GENETICIST—Crop Plants. University of Wisconsin (UW)—Madison. The Department of Agronomy is accepting applications for this tenure-track position, assistant professor level. Research (75 percent) will center on the structure, function, and regulation of plant genes in nuclear and/or cytoplasmic genomes at molecular and physiological levels in agronomic crop plants. Instruction (25 percent): share the teaching of specialized departmental courses and eventually develop a course dealing with molecular technology in the improvement of agronomic crops. Research and communication linkages with departmental plant physiologists and plant breeders will be encouraged, as will campus-wide interactions as a member of the UW-Madison Biotechnology Center. Preference will be given to applicants with training and/or experience in plant breeding and genetics in addition to training in molecular genetics and cell biology. Postdoctoral experience is desired. Applicants should submit curriculum vitae and three letters of reference by 22 February 1985 to: Dr. Robert A. Forsberg, Chairman, Department of Agronomy, University of Wisconsin-Madison, Madison, Wis. 53706. *An Equal Opportunity Employer.*

PLANT PHYSIOLOGY/PLANT BIOCHEMISTRY Assistant Professor (Advanced rank possible in exceptional circumstances)

Broadly trained applicants with backgrounds in plant physiology/biochemistry are desired. Experience in electron microscopy and histological techniques preferred. Teaching responsibilities will include courses in biochemistry and plant physiology. A 3-year appointment of a tenurable position requiring a Ph.D. degree. Postdoctoral experience desirable. Position available 1 July 1985. Please send curriculum vitae, statement of research/teaching interests, and the names and addresses of three references by 20 February 1985 to: Dr. H. W. Art, Chairman, Biology Department, Williams College, Williamstown, Mass. 01267.

An Equal Opportunity/Affirmative Action Employer, Williams College especially welcomes applications from women and minority candidates.

POSTDOCTORAL FELLOWSHIP—Neuroanatomy of Aging and Alzheimer's Disease. Opportunity to interact with NIH-funded research programs directed at: (i) neuroanatomic changes in aging and dementia, and (ii) computer-assisted microscopy. Experience with immunocytochemical and/or ultrastructural techniques preferred. The laboratory is located near Boston and is affiliated with the Harvard University NIA Alzheimer's Research Center. Send curriculum vitae and statement of training and goals to: Dr. Joseph Rogers, Department of Neurology, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605.

POSTDOCTORAL FELLOW OR RESEARCH ASSOCIATE—Computer-Assisted Digital Image Processing. Ongoing NIH-funded program to develop quantitative neuroanatomy methods using computer-assisted microscopy. Engineering and computer science applicants with an interest in biomedical applications, or neuroscientists with background in image processing or Fourier methods are especially sought. The laboratory is located near Boston. Send curriculum vitae and statement of training and goals to: Dr. Joseph Rogers, Department of Neurology, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605.

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

**U.S. DEPARTMENT OF AGRICULTURE (USDA)
AGRICULTURAL RESEARCH SERVICE (ARS)
National Program Leaders—Two Positions
for (Forage, Pasture, and Range)
and (Weed Science)**

Highly qualified scientists are needed to assume the duties of national program leader and will serve as the focal point for national leadership and coordination of agricultural research programs relating to (forage, pasture, and rangelands) and (weed science), on the Agricultural Research Service's National Program Staff.

The successful candidate will focus on building broad multidisciplinary research programs to solve national agricultural problems conducted throughout the United States and in several foreign countries. Candidates must demonstrate skills for program planning, setting research priorities, allocating resources, and evaluating programs.

QUALIFICATIONS:

In addition to the basic requirement for all grades, candidates must have 3 years' professional experience in the programs related to (forage, pasture, and rangelands) and/or (weed science). Some education may be substituted for a portion of the experience requirements.

The positions are located in Beltsville, Maryland. Grade level is GM-15. Salary range is \$50,495 to \$65,642, based on qualifications and experience. U.S. citizenship is required.

Candidates *must* contact the person listed below to obtain an application package.

Applications must be received no later than February 28, 1985 and sent directly to:

Ivy C. Hungerford
Personnel Division
U.S. Department of Agriculture
Room 107, Building 003, BARC-West
Beltsville, MD 20705

USDA IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.

The International Maize and Wheat Improvement Centre or the Centro Internacional de Mejoramiento de Maiz y Trigo (CIMMYT) is a world renowned and internationally funded nonprofit scientific research and training institution engaged in a worldwide research program for maize, wheat, triticale and barley with emphasis on food production in developing countries. The Headquarters of CIMMYT is at El Batan near Mexico City.

The internationally constituted Board of Trustees of CIMMYT has appointed a Search Committee to recruit a

Director-General (CIMMYT)

The Director-General will be responsible for directing a top-flight internationally recognized team of research scientists and support staff working at CIMMYT sites in Mexico and on special program assignments throughout the Third World. Strong leadership will be essential to ensure that CIMMYT maintains and expands its record of innovation and relevance to urgent Third World food problems. Outstanding professional research and administrative credentials will be needed to plan realistically for short and longer terms, to integrate action with ideas, and to catalyze vigorous follow-through on programs. Strong diplomatic presence is critical to successful working relations with Governments, donors and staff.

A sound scientific qualification and experience preferably in agriculture or a related science is a prerequisite with a post-graduate degree desirable.

The Director-General will be a very effective communicator in English. It is highly desirable that he or she be competent in Spanish as well.

Significant and extensive experience in managing research operations, preferably agricultural research is essential.

The successful candidate should also have had working experience in a developing country.

Salary and benefits will be internationally competitive. If you are interested in this Mexico-based position, please forward your curriculum vitae to: **Chairman, CIMMYT Search Committee, c/o IDRC, P.O. Box 8500, Ottawa, Ontario, Canada K1G 3H9.**

ADVERTISING SPACE SALES Scientific Magazines, NYC Area

- You have a technical education . . . preferably Life Sciences.
- You have 3–5 successful years selling scientific equipment, supplies or reagents.
- You want to sell advertising space.
- You reside in the New York metropolitan area.

If the above matches your background and career objectives, you will want to meet us. We represent some of the best magazines and manage some of the largest meetings in the biotechnology and health care markets.

Resumé to Herb Burklund, Scherago Associates, Inc., 1515 Broadway, New York, NY 10036.

NEW SMALL GRANTS PROGRAM INVESTIGATORS AT BACCALAUREATE DEGREE-GRANTING COLLEGES AND UNIVERSITIES

The National Institutes of Health (NIH) announces a new and unique opportunity for the support of independent health-related research projects.

ACADEMIC RESEARCH ENHANCEMENT AWARD

- Feasibility studies/Pilot studies/Research projects
 - Up to \$50,000 over a 24-month period
 - Application receipt deadline, April 1, 1985

Eligibility Criteria: Eligible institutions are those offering baccalaureate degrees in the sciences related to health, that are not eligible to receive the NIH Biomedical Research Support Grant in Fiscal Year 1985.

Award Criteria: Funding decisions are based on the research project's scientific merit and relevance to NIH programs, and the institution's contribution to the undergraduate preparation of doctoral-level health professionals. Among projects of essentially equivalent scientific merit and program relevance, preference will be given to those submitted by institutions that have granted baccalaureate degrees to 25 or more individuals who, during the period 1977–1984, obtained academic or professional doctoral degrees in the health-related sciences.

Anticipated Number of Awards: Up to 75

Eligibility Information and Application Materials

Office of Grants Inquiries
Division of Research Grants
449 Westwood Building
(301) 496-7441



Program Information

Extramural Program Management
Office
Office of Extramural Research
and Training
317 Shannon Building
(301) 496-8915

**National Institutes of Health
Bethesda, MD 20205**

POSITIONS OPEN

MOLECULAR GENETICS—ZOOLOGY. The Department of Zoology at the University of Tennessee-Knoxville invites applications for a tenure-track position in **GENETICS** at the assistant professor level, beginning 1 September 1985. Applicants must be trained in techniques of eukaryotic molecular genetics. Research interests in developmental or evolutionary genetics are preferred, but no specific area is mandated. Two or more years of postdoctoral experience and a record of research productivity are expected. Applicants should submit curriculum vitae, reprints, and a description of future research goals, and have three or four letters of reference sent by 15 March 1985 to: **Dr. Jeffrey MacCabe, Department of Zoology, University of Tennessee, Knoxville, Tenn. 37996.** The University of Tennessee is an Equal Opportunity/Affirmative Action Employer.

NMR IN VIVO: Ph.D. NMR SPECTROSCOPIST. For NIH-funded resource at University of Florida. Whole body imager, animal imager/spectrometer, two spectrometers. Excellent research opportunity in an active NMR group. Strong background in NMR techniques and instrumentation a must. Assistant research scientist. Salary dependent on qualifications. Application deadline: 15 February 1985; anticipated starting date: 1 March 1985. Send résumé and have three letters of reference sent to: **Kate Scott, Ph.D., J-374 J. Hillis Miller Health Center, Department of Radiology, Gainesville, Fla. 32610.** The University of Florida is an Equal Opportunity/Affirmative Action Employer.

NMR IN VIVO: Ph.D. PHYSIOLOGIST/BIOCHEMIST for NIH-funded resource at University of Florida. Whole body imager, animal imager/spectrometer, two spectrometers. Excellent research opportunity with an active NMR group in large medical center. Strong background in metabolism, bioenergetics, and animal research a must. NMR experience desirable. Joint appointment with biochemistry possible. Assistant research scientist. Salary dependent on qualifications. Application deadline: 15 February 1985; anticipated starting date: 1 March 1985. Send résumé and have three letters of reference sent to: **Kate Scott, Ph.D., J-374 J. Hillis Miller Health Center, Department of Radiology, Gainesville, Fla. 32610.** The University of Florida is an Equal Opportunity/Affirmative Action Employer.

Ph.D. ORGANIC CHEMIST—The Eastman Chemicals Division of Eastman Kodak Company, a major manufacturer of chemicals, plastics, and fibers, has an opening for a Ph.D. organic chemist with specialization in fundamental research who will work on peptides useful in animal health and nutrition applications. Skills in computer aided molecular design are desired.

Individual will be domiciled in Kingsport, Tennessee, a progressive city in the tri-cities area of northeast Tennessee. The population of the tri-cities area is approximately 200,000. Individual will receive a salary commensurate with experience and qualifications and an outstanding employee benefits program. Interested candidate should send résumé to: **Cheryl Harvey, Personnel Department, Tennessee Eastman Company, P.O. Box 1975, Kingsport, Tenn. 37662.**

An Equal Opportunity Employer.

POSTDOCTORAL POSITION IN STREAM ECOLOGY

Postdoctoral research project available addressing the biogeochemistry of stream ecosystems influenced by the activity of large animals. **Minimum qualifications:** Ph.D. in biological or chemical science. **Desired qualifications:** Ph.D. in biological or chemical science with demonstrated research potential in hydrology, stream ecology, element cycling, and ecosystem productivity, as well as an interest in multidisciplinary collaborative research. **SALARY:** \$22,000. Effective 1 June 1985 for 1 year with possible extension for second year.

Send résumé and names of three references postmarked by 15 March 1985 to:

Dr. Robert Naiman
Associate Director, Water Division
Natural Resources Research Institute
University of Minnesota, Duluth
214 Research Laboratory Building
2205 East 5 Street
Duluth, Minn. 55812

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

POSITIONS OPEN

PEST MANAGEMENT COORDINATOR to develop and implement insect and disease management program for greenhouse range with 7 acres of additional outside area. Growers of annuals, perennials, foliage, flowering plants for retail stores. Develop, implement, and evaluate program to reflect changing crop and conditions. Ph.D., applied, implementor to make program work! Practical person, teaching, staff development. Expanding company. **Résumé to: T. E. Corell, Flower Time Inc., 1178 Route 109, Lindenhurst, N.Y. 11757.**

POSTDOCTORAL POSITION available immediately to study: (i) the biosynthesis and membrane insertion of the Na,K-ATPase, and (ii) the regulation of Na,K-ATPase activity in developing brine shrimp. Ph.D. in molecular biology, biochemistry, or a related field is required. Preference will be given to applicants familiar with techniques in molecular biology, particularly cell-free translation, immunoprecipitation, and nucleic acid handling. Send curriculum vitae and three letters of recommendation to: **Dr. Lowell E. Hokin, Department of Pharmacology, University of Wisconsin Medical School, 1300 University Avenue, Madison, Wis. 53706.**

POSTDOCTORAL POSITION available immediately to study the effects of Δ^9 -tetrahydrocannabinol on phospholipid metabolism and eicosanoid formation in slices of brain cortex and related CNS structures. Ph.D. in biochemistry, molecular pharmacology, or a related field is required. Familiarity with phospholipid tracer studies and eicosanoids is preferable but not essential. Send curriculum vitae and three letters of recommendation to: **Dr. Lowell E. Hokin, Department of Pharmacology, University of Wisconsin Medical School, 1300 University Avenue, Madison, Wis. 53706.**

POSTDOCTORAL POSITIONS IN MEDICAL MYCOLOGY AND MOLECULAR BIOLOGY OF FUNGI. A number of postdoctoral positions are available in the Medical Mycology Program at Washington and St. Louis University Schools of Medicine. Participating faculty and research interests are: **Gerald Medoff:** Molecular pharmacology of antifungal agents; biochemical and structural changes during morphogenesis of *Histoplasma capsulatum*; restriction endonuclease analysis of mitochondrial and ribosomal DNA of *H. capsulatum* gene isolation and regulation of morphogenesis in *H. capsulatum*. **Alan M. Lambowitz:** Plasmids, gene isolation, genetic engineering procedures, mitochondrial RNA splicing in *Neurospora*. **J. Russ Little:** Cellular immunology, macrophage functions, macrophage secretory products antigen presentation, macrophage cultures, mechanism of adjuvant action, in vitro models of host parasite interactions—especially pathogenic fungi. **George S. Kobayashi:** Host-parasite interaction of medically important fungi; novel approaches to diagnosis and therapy of systemic mycoses: pharmacology of antifungal agents; and biochemical and physiological studies on fungal dimorphism. **David Schlessinger:** Mechanism of action of antifungal antibiotics; RNA processing and metabolism in bacteria and mammalian cells. **William E. Goldman:** Molecular basis of pathogenicity of *Histoplasma capsulatum* and *Bordetella pertussis*; in vitro models of respiratory tract infections and toxin effects; biochemical analysis and genetic manipulation of virulence related phenotypes. Applicants should send curriculum vitae and names of three references directly to the individuals listed above or to: **Dr. George Kobayashi, Washington University School of Medicine, Infectious Diseases Division, Campus Box 8051, 660 South Euclid, St. Louis, Mo. 63110.**

A POSTDOCTORAL POSITION available immediately to study the regulation of angiotensin-catecholamine interactions in the brain at the cellular level. Experience in HPLC, cell culture, neurochemical, and other biochemical techniques is desirable. Send résumé and names of three references to: **Dr. Mohan K. Raizada, Department of Physiology, College of Medicine, Box J-274 JHMC, University of Florida, Gainesville, Fla. 32610, or telephone: 904-392-3791.**

POSTDOCTORAL POSITION available early 1985. Problems of current interest include: cell surface membrane interchange with intracellular membrane systems, and cellular controls on endo- and exocytosis. Experience with immunocytochemistry, membrane biochemistry, or ion transport is desirable. Send curriculum vitae and names of three references to: **Dr. Blair Bowers, Building 3, Room B1-22, National Institutes of Health (NIH), Bethesda, Md. 20205.** NIH is an Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION—SPATIAL VISION

Available to carry out electrophysiological studies of spatial and temporal information processing in striate and extrastriate cortices of the macaque monkey. Predoctoral experience in electrophysiology, visual psychophysics, or computer science is desirable. Send brief statement about principal interests, curriculum vitae, and names of three references to: **Daniel A. Pollen, M.D., Department of Neurology, University of Massachusetts, Worcester, Mass. 01605.** An Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL POSITION available to study regulation of bacteriochlorophyll and heme biosynthesis in *Rhodospseudomonas capsulata*. Applicants should have experience with either photosynthetic bacteria or molecular biological techniques. Send curriculum vitae and names of three references to: **Dr. Alan Biel, Department of Biology, Tulane University, New Orleans, La. 70118.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION—CARDIAC PHYSIOLOGY

Cardiology Research Laboratory performing isolated heart model with special interest in tracer kinetics and metabolism is seeking individual with similar pre- or postdoctoral experience. Send brief statement of research interests, experience, and curriculum vitae to: **Jeffrey A. Leppo, M.D., Department of Nuclear Medicine, University of Massachusetts Medical Center, Worcester, Mass. 01605.**

An Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL POSITIONS available in Departments of Biochemistry, Microbiology and Immunology, Pharmacology, and Physiology. Applicants must have a Ph.D. or M.D. degree. Positions available during 1984-1985.

Send applications to appropriate department head, **UNIVERSITY OF ARIZONA, Arizona Health Sciences Center, Tucson, Ariz. 85724.**

An Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.

POSTDOCTORAL RESEARCH IN MOLECULAR PARASITOLOGY

Research associate position available immediately for a molecular biologist to join an active research group composed of members of the Division of Geographic Medicine and Department of Molecular Biology. Current research is focused on the cloning and characterization of protective antigens of *Brugia malayi*, the causative agent of lymphatic filariasis. We seek an individual who can play a major role in this project as well as pursue independent research into some aspect of the molecular biology of the parasite. The position is supported by a long-term award. Demonstrated competence in recombinant DNA techniques is required.

Send curriculum vitae and names of three references to: **Dr. Timothy W. Nilsen, Department of Molecular Biology and Microbiology, Case Western Reserve University, School of Medicine, 2119 Abington Road, Cleveland, Ohio 44106.**

POSTDOCTORAL RESEARCH ASSOCIATE to assist with NIH project. Applicant is expected to have indepth knowledge of lipoprotein biochemistry and previous postdoctorate research experience. Salary dependent on qualifications for full-time 3-year appointment. Send curriculum vitae to: **R. N. Redinger, M.D., Chief, Division of Gastroenterology/Hepatology, University of Louisville, Louisville, Ky. 40292.** Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE available immediately to participate in a multidisciplinary approach to the study of interactions between central adrenergic and cholinergic neurons in autonomic regulation and behavior. Studies will include measurement of brain neurotransmitter metabolism, drug receptor interactions both in vivo and in vitro and correlation of neurochemical changes with physiological and behavioral responses. Annual salary: \$20,000. Experience in neurochemistry is desired. Send curriculum vitae and names of three references to: **Dr. Jerry J. Buccafusco or Dr. Robert S. Aronstam, Department of Pharmacology and Toxicology, Medical College of Georgia, Augusta, Georgia 30912.** An Equal Opportunity/Affirmative Action Employer. J2452.

THE AUSTRALIAN NATIONAL UNIVERSITY CENTRE FOR RESOURCE AND ENVIRONMENTAL STUDIES DIRECTOR

The University seeks to appoint a director of the Centre for Resource and Environmental Studies to succeed Professor Stuart Harris who in October 1984 took up the post of Secretary to the Department of Foreign Affairs in the Australian Public Service.

The Centre undertakes advanced applied research on resource and environmental policy issues. Particular emphasis is placed on issues of importance to Australia. At present there are 11 academic staff (many on short-term appointments), a number of visitors and students, and a substantial support staff. The director's professional background may be from any area appropriate to the Centre.

In employing a policy framework for synthesising its research, the Centre seeks to present its findings to senior policy advisers and policy makers. The director will, it is expected, have experience of interacting with such groups at an appropriately high level.

The director will also hold a chair in the University. The term of office as director will be a matter for agreement with the University but is likely to be for 5 to 7 years with the possibility of extension for a further period. Appointment as professor could be either for a fixed term or until retiring age. Enquiries from persons interested in secondment from their home institutions would be welcomed.

The director will receive a professional salary of, currently, \$55,282 per annum, plus a responsibility loading of, currently, \$2,726 per annum, and a small entertainment allowance.

Grants are provided towards travel and removal. The appointee (unless on secondment) will be required to become a member of the Superannuation Scheme for Australian Universities. Assistance with finding accommodation is provided for an appointee from outside Canberra. The University reserves the right not to make an appointment or to make an appointment by invitation at any time.

Anyone interested in this appointment is asked to obtain further information from the undersigned, with whom applications close on 8 March 1985.

Patricia M. White
Acting Registrar
GPO Box 4
Canberra, A.C.T. 2601
Australia

The University is an Equal Opportunity Employer

THE ROCKEFELLER FOUNDATION *solicits research proposals on* THE GENETIC ENGINEERING OF RICE

Recent advances in cellular and molecular biology offer the possibility of increasing the efficiency, precision, and productivity of classical plant breeding. The Rockefeller Foundation will support research designed to generate the technology needed to apply these advances to the genetic improvement of rice and will support the transfer of this technology to the rice improvement programs of international and national agencies in developing countries. The program requires a 10–15 year commitment to targeted research and will progress through a series of stages leading from basic technology development to its application in rice breeding programs. Included will be research and training on: important agronomic traits, rice genetics, tissue culture, gene transfer and regulation of gene expression, technology transfer, and the potential socioeconomic and environmental impact of genetic engineering in developing countries. During 1985, the Foundation is particularly interested in receiving proposals on the following two topics.

Important Agronomic Traits. The application of genetic engineering to rice improvement will require identification and characterization of useful traits that, if added to or modified in a rice cultivar, would lead to improved yield. New knowledge will be needed concerning the biochemistry, physiology and genetics of these traits before the genes that determine them can be identified and manipulated.

Rice Genetics. Fundamental knowledge of rice genetics is essential for genetic engineering of this important crop. Linkage maps and markers can be used for the study of difficult to detect genes, to follow quantitative and multigenic traits, and to locate and isolate specific genes. Proposals on the development and use of chromosome maps and marker systems for indica rice are of particular interest.

Grants will be awarded to universities or nonprofit research institutions. Proposals will be evaluated on their relevance to program requirements, the qualifications of the principal investigator(s), and the appropriateness of the budget. They may be submitted at any time during 1985. Inquiries about the program and all proposals should be sent to: The Director, Agricultural Sciences Division, The Rockefeller Foundation, 1133 Avenue of the Americas, New York, New York 10036, USA.



THE AUSTRALIAN NATIONAL UNIVERSITY JOHN CURTIN SCHOOL OF MEDICAL RESEARCH POSTDOCTORAL FELLOW/RESEARCH FELLOW/ SENIOR RESEARCH FELLOW [SEVERAL POSITIONS]

Applicants for these research positions should have a Ph.D. degree (or equivalent qualification) and expertise in any of the areas of research listed below. A number of appointments will be available to be taken up during the second half of 1985.

Department of Biochemistry [Head: Professor F. Gibson]: Energy-transducing ATPase; membrane assembly; bioenergetics; mechanism of action of classical and multifunctional enzymes; molecular biology; gene expression.

Department of Experimental Pathology [Head: Professor P. C. Doherty]: Biology and biochemistry of tumor metastasis, malignancy and host response; viral and auto-immune pathological process in the central nervous system; vascular and lymphatic pathology; inflammation; pathogenesis of malaria.

Department of Human Biology [Head: Dr R. L. Kirk]: Recombinant DNA techniques applied to genetic diseases and to human population differentiations; metabolic defects; HLA and complement genetics; red cell enzyme and serum protein polymorphisms.

Department of Immunology [Head: Professor B. Morris]: Ontogeny of the immune response; immunology of the foetus and pregnancy; experimental surgery of the embryo and foetus; embryo transplantation; genetics of disease resistance; reproductive and developmental biology; tissue transplantation; physiology of the lymphatic system.

Department of Medicine and Clinical Science [Head: Professor W. F. Doe]: Mucosal immunity and inflammation; neutral proteases; growth factors and differentiation of bone marrow cells, macrophages and natural killer cells; pathogenesis of inflammatory bowel disease and colon cancer; neurophysiology of intestinal motility; calcium and cell regulation; malignant hyperpyrexia; asthma; platelets, atheroma and haemostasis; transplantation biology.

Department of Microbiology [Head: Professor G. L. Ada]: Properties of infectious agents, especially viruses; epidemiological studies of, and immune responses, particularly cell-mediated responses, to viral infections; transformation of cells by viruses; engineering of viruses to make better vaccines; surveillance mechanisms against tumours; membrane structures and antigens, such as histocompatibility antigens, involved in cell-cell recognition.

Department of Pharmacology [Head: Professor D. R. Curtis]: Mammalian central transmitters; pain and analgesia; nerve growth factors.

Department of Physical Biochemistry [Head: Professor L. W. Nichol until May 1985]: Biological macromolecules; interacting protein systems; multienzyme complexes; enzymes of sulphur metabolism; protein conformation and hydration; secretory and blood proteins.

Department of Physiology [Head: Professor P. W. Gage]: Ion channels involved in synaptic transmission at peripheral and central synapses; effects of general anaesthetics; calcium ionic and gating currents; ion channels in epithelial and tumorigenic cells; charge movements in nerve and muscle; contractile activation in muscle; visual information processing.

Experimental Neurology Unit [Head: Dr S. J. Redman]: Neurophysiology; spinal cord; synaptic transmission at central synapses; respiratory neurophysiology; somatosensory pathways; control of movement; physiology of the cerebral cortex in primates.

Influenza Virus Immunochemistry Laboratory [Dr W. G. Laver]: Structure and variation of influenza virus antigens and their antibodies.

Medical Molecular Biology Unit [Head: Dr I. G. Young]: Molecular biology of lymphokines and growth factors, gene expression, differentiation, oncogenesis.

CONDITIONS OF EMPLOYMENT

Salary will be in accordance with qualifications and experience within the ranges: senior research fellow: \$34,699 to \$41,390 per annum; research fellow: \$24,840 to \$32,634 per annum; postdoctoral fellow grade 1 [at fixed point on scale]: \$21,411 to \$24,528 per annum.

Appointment as senior research fellow/research fellow will be for up to 3 years initially with the possibility of extension after review to a maximum of 5 years; as postdoctoral fellow for 1 or 2 years initially, with possibility of extension to maximum of 3 years.

Grants are provided towards travel and removal. Assistance towards housing is given to an appointee from outside Canberra. Eligible appointees will be required to join the Superannuation Scheme for Australian Universities. The University reserves the right not to make an appointment or to make an appointment by invitation at any time. Maternity leave is available.

Prospective applicants are encouraged to write for further information before lodging applications with the undersigned. The closing date for receipt of applications is 8 March 1985.

P. M. WHITE
ACTING REGISTRAR
GPO Box 4
CANBERRA ACT 2601
AUSTRALIA

The University is an Equal Opportunity Employer

CHAIRMAN AND PROFESSOR
Department of Horticultural Science
Ontario Agricultural College
University of Guelph

Nominations and applications are invited for the position of Chairman of the Department of Horticultural Science at the University of Guelph, Guelph, Ontario, Canada. The position becomes available 1 July 1985. The department offers an undergraduate major in horticultural science and a graduate program at the master's and Ph.D. levels. It currently has 18 faculty and 35 graduate students.

The department chairman will have administrative responsibilities for the departmental programs; provide leadership to the faculty and assist them in professional development; maintain liaison with other administrators within the university, with government agencies and allied industry groups to co-ordinate research, teaching, and extension programs and strengthen interdisciplinary activities; actively seek and develop new sources of funding for the departmental programs and take an active part in professional organizations. The position provides the opportunity to continue personal involvement in teaching, research, and extension. Candidates must hold a Ph.D. degree in horticulture or a closely related field, and have an excellent scholarly record. Candidates must have demonstrated leadership and administrative ability. They should be active in research and in graduate and undergraduate education.

Applications will be accepted until 1 March 1985. Applicants should submit curriculum vitae and the names of three people who may be contacted for letters of reference to: **Dr. F. L. McEwen, Dean, OAC, University of Guelph, Guelph, Ontario, Canada N1G 2W1. Telephone: 519-824-4120, extension 2284.**

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Position subject to final budgetary approval.

DIRECTOR OF THE
CENTER FOR MARINE STUDIES
UNIVERSITY OF MAINE, ORONO

Applications and nominations are invited for the position of director of the Center for Marine Studies at the University of Maine at Orono. The state of Maine and the University administration have recently placed special emphasis, with substantial budgetary support, on the development of a strong and visible Center for Marine Studies to serve the people of Maine through its University. The director will have primary responsibilities for the continued development of research, graduate education, and outreach activities of the Center. The Center includes a faculty with marine-related research interests, the Sea Grant Program, and a coastal research facility at the Ira G. Darling Center. In addition to the administrative responsibilities, the director will oversee the development of graduate programs in several areas of marine studies to supplement existing M.S. and Ph.D. degree programs in oceanography. Research and graduate educational programs are focused primarily on the Gulf of Maine. Faculty members have strengths in the areas of marine geology, marine biology, fish population biology, fish pathology, shallow-water oceanography, ocean engineering, resource development, aquaculture, and the socioeconomic and legal aspects of the marine environment. Candidates should have an earned doctorate and broad experience in any of the relevant areas of marine studies; significant teaching, public service, and administrative experience; and a record of scholarly publications in marine research. Also essential is a proven record of outstanding leadership capacity with a broad vision for the continued improvement of the Center's research, graduate education, and public service activities. Salary is competitive and negotiable; the desired starting date is 1 August 1985. Nominations or letters of interest, curriculum vitae, and names of at least three referees should be sent by 8 March 1985 to: **Dr. George L. Jacobson, Acting Director, Center for Marine Studies, 14 Coburn Hall, University of Maine at Orono, Orono, Maine 04469. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE to investigate kinetics and mechanism of enzymatic reactions [see *JBC* 258, 909 (1983)]. Applications are invited from individuals with experience in biochemistry and/or organic chemistry. Position available anytime within the next 3 months. Salary based on qualifications. Send résumé and three letters of recommendation to: **Dr. R. M. Pollack, Department of Chemistry, University of Maryland Baltimore County (UMBC), Baltimore, Md. 21228. The University encourages qualified women and minorities to apply. UMBC is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE POSITION available to study DNA damage by alkylating agents and its effects on gene expression and differentiation. Research involves cell culture, HPLC, affinity chromatography, Southern and Northern blotting, DNA sequencing, and studies of chromosome structure. Send curriculum vitae and three letters of reference to: **Dr. Michael D. Topal, Lineberger Cancer Research Center, School of Medicine, University of North Carolina, Chapel Hill, North Carolina 27514. The University of North Carolina is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE/TEMPORARY—To develop techniques for protoplast fusion and selection of somatic hybrids of alfalfa and other *Medicago* species, regenerate these hybrids, and biochemically confirm their identity. Ph.D. required, preferably in the plant sciences. Position is for 12 months, starting after 15 February 1985, and is renewable for a second year. Salary is \$16,000 to \$17,000. Send résumé, transcripts, and copies of publications, and have three letters of recommendation sent to: **Dr. Lowell B. Johnson, Department of Plant Pathology, Throckmorton Hall, Kansas State University, Manhattan, Kans. 66506. Telephone: 913-532-6176. Applications accepted until 15 February 1985. Kansas State University is an Equal Opportunity/Affirmative Action Employer.**

HARVARD SCHOOL OF PUBLIC HEALTH
PROFESSOR OF
TROPICAL PUBLIC HEALTH

The Department of Tropical Public Health at the Harvard School of Public Health is searching for a **Professor of Tropical Public Health** who is a leader in the field of biochemistry and pharmacology of parasites. The successful candidate will be expected to lead a vigorous research teaching program. *Applications from women and minority candidates are particularly invited.* Applicants should send their curriculum vitae and bibliographies to:

Chairman
Tropical Public Health Search Committee
Office of the Dean
Harvard School of Public Health
677 Huntington Avenue
Boston, Mass. 02115

Harvard University is an Equal Opportunity Employer with an Affirmative Action Program.

Ph.D. PSYCHOLOGIST

Full-time position for experienced Ph.D. psychologist for collaborative interdepartmental studies on heritable diseases of the nervous system in aging. Must have established research achievements, capacity for group leadership, and capability for independent grant support. Faculty appointment in the Department of Neurology, College of Physicians and Surgeons of Columbia University, appropriate to qualifications. *Columbia University is an Equal Opportunity Employer.* Responses to: **Timothy A. Pedley, M.D., Chairman, Committee on Appointments and Promotions, The Neurological Institute, 710 West 168 Street, New York, N.Y. 10032.**

RESEARCH ASSOCIATE POSITION

Research associate position available immediately to participate in studies involving in vitro expansion and clonal isolation of T cells. Successful Ph.D. applicant will join ongoing research in cell-mediated tumor immunology. Salary commensurate with experience.

Letters of application should include curriculum vitae and two letters of recommendation. Send application to:

Dr. Normal Wolmark
Associate Professor of Surgery
University of Pittsburgh
3459 Fifth Avenue
Pittsburgh, Pa. 15213

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately to study host range specificity in plant pathogenic *Xanthomonas*. Experience in modern bacterial taxonomic methods, in DNA liquid and blot hybridization, and/or in broad bacterial host-range gene expression vectors preferred. Salary: \$24,000 for at least 2 years. Send résumé, statement of research interests, most appropriate reprint(s), and three telephone references to: **D. W. Gabriel, Department of Plant Pathology, University of Florida, Gainesville, Fla. 32611. Affirmative Action/Equal Opportunity Employer.**

PROTEIN CHEMIST

Must have several years of experience in purification of proteins and peptides. Competitive salary, based on experience. Send curriculum vitae and references to: **Employment Manager, Human Resources Department, Children's Hospital of San Francisco, 3700 California Street, San Francisco, Calif. 94118.**

Equal Opportunity Employer

BROCK UNIVERSITY, Ontario, Canada. RESEARCH ASSOCIATE or POSTDOCTORAL FELLOW to work in the areas of cytochrome c oxidase mechanisms and energetics. Some teaching included. Total stipend between \$22,000 and \$25,000. Appointment for 2 or 3 years, commencing 1 July 1985 or by agreement. Applications by 1 April 1985. For further information, contact: **Professor P. Nicholls, Department of Biological Sciences, Brock University, St. Catharines, Ontario, Canada L2S 3A1. Telephone: 416-688-5550, extension 3227.**

RESEARCH BOTANIST to do original research on the regulation of fungal dimorphism in *Ceratocystis ulmi* and to define the function of the calcium binding protein calmodulin in fungi. Ph.D. or equivalent in botany with experience in protein purification, fungal dimorphism, and enzymology. Must have substantial scientific publications in refereed journals; \$18,000 per year. Send résumés to: **Robert Powell, Nebraska Department of Labor, P.O. Box 94600, State House Station, Lincoln, Nebraska 68509.**

RESEARCH POSITIONS

Three **Postdoctoral and/or Research Associate Positions** available for studies on:

- 1) Novel tissue growth factors. Candidates preferred with experience in tissue culture, protein isolation and characterization HPLC, monoclonal antibodies, and hybridoma technology;
- 2) Regulation of cell surface receptors. Candidates with a Ph.D. in biochemistry or molecular biology preferred. Techniques to be used are isolation and characterization of membrane receptor proteins using monoclonal antibodies, and complementary DNA cloning sequencing and gene transfer experiments;
- 3) Developmental and hormonal regulation of gene expression. Candidates with experience in recombinant DNA, cloning sequencing, expression vectors, and cell transfection studies preferred.

Submit statement of interest, curriculum vitae, and names of three references to: **Dr. Henry G. Friesen, Professor and Head, Department of Physiology, The University of Manitoba, 770 Bannatyne Avenue, Winnipeg, Manitoba, Canada R3E 0W3.**

TROPICAL BIOLOGIST/PROGRAM COORDINATOR

The Department of Biology, University of Miami, invites applications and nominations for a tenure-acquiring position of **TROPICAL BIOLOGIST/PROGRAM COORDINATOR**. We seek a person at the rank of assistant or associate professor with an established record of innovative research and publication in any area of tropical biology, including, but not restricted to, molecular, cellular, or sensory biology. In addition, the successful candidate will work closely with the departmental chair (Jay M. Savage) to develop further the Tropical Biology Program. This 12-month appointment will be approximately 50 percent research and 50 percent teaching and program coordination.

Arrange for four letters of reference, curriculum vitae, a statement of research interests, and not more than three representative reprints to be sent to: **Julian C. Lee, Chairperson, Tropical Coordinator Search Committee, Department of Biology, University of Miami, P.O. Box 249118, Coral Gables, Florida 33124. Deadline for applications is 1 March 1985.**

An Affirmative Action/Equal Opportunity Employer

**DIRECTOR, CELL SCIENCE
LABORATORY
BIOTECHNOLOGY CENTER
UNIVERSITY OF ILLINOIS AT
URBANA-CHAMPAIGN**

The University of Illinois at Urbana-Champaign invites applicants for the directorship of its campus Cell Science Laboratory. Qualifications include a Ph.D. in microbiology or a related field. Preference will be given to candidates who have completed postdoctoral work and with experience in cellular biochemistry, immunology, or cell culture and hybridoma technology. Familiarity with fluorescence-activated cell sorting and analysis is desirable.

Duties will be to direct and oversee the operations and continued development of a well-equipped and staffed campus-wide Cell Science Laboratory. The laboratory will have service, training, and research responsibilities which will initially focus on hybridoma technology but will develop to include other innovative technologies in cell biology.

This is a permanent, full-time academic professional position. Starting date will be as soon after 1 March 1985 as possible. Salary will be based on experience and qualifications.

To expedite the filling of the position, qualified applicants may be interviewed during the advertising period. All applications received by 1 March 1985 will receive full consideration. Send letter of application, curriculum vitae, and the names, addresses, and phone numbers of three references to:

Dr. Wayne A. Tompkins
Veterinary Pathobiology
University of Illinois at Urbana-Champaign
2227 Veterinary Medicine Basic Sciences
Building
2110 South Lincoln Avenue
Urbana, Illinois 61801
Telephone: 217-333-7825

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

**MOLECULAR BIOLOGIST
University of California, Riverside
Department of Entomology**

The Riverside campus of the University of California is currently forming a Multidisciplinary Group in molecular biology. The unit will involve components of several departments, including Plant Pathology, Biochemistry, Botany and Plant Sciences, Biology, Nematology, as well as the Division of Biological Control within the Department of Entomology.

Applications are invited for a tenure-track, assistant professor position in molecular biology/insect pathology in the Division of Biological Control. The appointee will be expected to develop a vigorous research program directed toward an increased understanding of the molecular biology of insect pathogens. More specifically, he/she will be expected to assess the potential for applying current methodologies of molecular biology to the area of insect pathology aimed at improving the efficacy of insect pathogens for biological control. The position will also involve teaching responsibilities and graduate student supervision. A Ph.D. degree in cell biology/biochemistry is required, with training in molecular genetics and recombinant DNA technology. Postdoctoral experience is highly desirable.

Applicants should send curriculum vitae, list of publications, a statement of interests, and a list of five references to: **Dr. B. A. Federici, Division of Biological Control, University of California, Riverside, Calif. 92521.** The appointment will be effective 1 July 1985, although the position will remain open until a suitable candidate is selected.

The University of California, Riverside, is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are urged to apply.

The Environmental Research Division of Argonne National Laboratory is seeking individuals to fill the following positions:

SOIL SCIENTIST/MANAGER: Ph.D. or equivalent in soil chemistry, or soil science with a specialty in ion exchange and nutrient transformations, or a related area plus several years of successful scientific research experience in unmanaged plant/soil systems. Applicants must possess considerable knowledge of soil chemistry and soil geology, and considerable experience in innovative research design and multidisciplinary laboratory and field investigations. Management skills in developing, organizing, and implementing research programs are also necessary. Send résumé to: **Box-J-ERD-15657-55**

SOIL ECOLOGIST: Ph.D. or equivalent in soil microbiology or nutrient cycling with several years experience in field research activities. Applicants must possess considerable knowledge of soil microbial processes with an emphasis on nutrient cycling in forested watersheds. Considerable experience in designing and conducting both laboratory and field experiments are required. Send résumé to: **Box-J-ERD-8397-55**

HYDROLOGIST: Ph.D. or equivalent in hydrogeology, soil physics, or forest hydrology is required, and several years of related professional research is preferable. Applicants must possess considerable knowledge of relevant monitoring techniques and equipment, statistical methods for data evaluation, and modeling capabilities of complex hydrologic systems. Send résumé to: **Box-J-ERD-8393-55**

We offer comprehensive benefits and an excellent salary commensurate with your background. For prompt consideration, send résumé and qualifications to the proper box number in attention of: **Rosalie L. Bottino, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, Ill. 60439. An Affirmative Action/Equal Opportunity Employer, M/F.**

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Preference given to individuals with post-graduate experience and demonstrated accomplishments.

Please send a detailed resume and the name of at least three references to:

Darlene Schafer
DIFCO LABORATORIES
Research and Development Center
1180 Ellsworth
Ann Arbor, MI 48104

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POSITIONS OPEN

RESEARCH ASSOCIATE—A full-time position is available immediately for a Ph.D. or M.D. with two or more years of experience in protein purification/biochemistry or molecular biology. Experience in tissue culture also desirable. Project will involve study of growth factors synthesized by endothelial cells, their mode of action, and regulation of their biosynthesis. Funding is provided via a SCOR grant in atherosclerosis. Salary negotiable. Send curriculum vitae and names of three references to: **Dr. Larry Witte, Columbia University, Physicians & Surgeons, Department of Medicine, 630 West 168 Street, New York, N.Y. 10032.**

RESEARCH POSITION available in the molecular biology of poxviruses. Particular areas of interest are the elucidation of the molecular biology and genetic regulation of poxviruses and the refinement of poxviruses as eukaryotic cloning and expression vectors for the production of biologically active molecules and live recombinant vaccines. Positions are available at postdoctoral, advanced research associate level, and technical levels. Salaries commensurate with experience and training. If interested, please reply with curriculum vitae and three letters of recommendation to: **Dr. Enzo Paoletti, Wadsworth Center for Laboratories and Research/Health Research, Inc., New York State Department of Health, Albany, New York 12201.**

RESEARCH SCIENTIST. Research center for scientific computation. To develop analysis and implement iterative methods of numerical linear algebra, especially parallel and vector computers. Requires Ph.D. or equivalent degree in applied mathematics or computer science in addition to proven expertise in numerical software for the solution of large sparse linear systems of equations and large eigenvalue problems (symmetric and non-symmetric). The candidate must also have prior experience with the numerical solutions of partial differential equations arising from acoustics and structures problems. Full-time position with annual salary of \$40,000. Interested applicants must apply at or send their résumé to: **Connecticut State Job Service, 100 Arch Street, New Britain, Conn. 06051, and refer to Job Order Number 0388079.**

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Ph.D. or equivalent with training in immunology/immunogenetics to work on research related to the genetics of the allograft reaction. Salary: \$14,800. Position available 1 April 1985. Send résumés within 30 days to: **Administrative Office, 776 Scaife Hall, Department of Pathology, School of Medicine, University of Pittsburgh, Pittsburgh, Pa. 15261. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH TECHNICIAN II

Background in microbiology, genetics, physics, or engineering. To pursue studies on the biomechanics of bacteria. Supported by 3-year NIH award. Please direct curriculum vitae plus supporting material by 15 February 1985 to:

**Professor N. H. Mendelson
University of Arizona
425 Agriculture Sciences Building
Tucson, Ariz. 85721**

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VETERINARY MEDICINE. The University of Pennsylvania is inviting applications and nominations for the Chair of the Department of Clinical Studies (New Bolton Center) in the School of Veterinary Medicine. Duties are the fostering of creative scholarship, teaching and clinical training, and leadership of the faculty not only in traditional university pursuits but also in the operation of a major teaching hospital. New Bolton Center is the large animal facility for the University of Pennsylvania School of Veterinary Medicine. The center serves as one of the nation's major veterinary medical referral centers for large animals. This chair offers an unexcelled opportunity for academic leadership in clinical veterinary medicine. Nominations may be informal. Applications should include curriculum vitae and the names of three referees. Communications should be addressed by 1 May 1985 to: **Dr. Robert J. Eckroade, School of Veterinary Medicine, University of Pennsylvania, 382 West Street Road, Kennett Square, Pennsylvania 19348.**

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RESEARCH BIOCHEMIST. Applications are invited for a permanent research biochemist position available immediately. Advanced training and documented research experience in protein, enzyme, and analytical-instrumental biochemistry required. Salary: \$25,000 to \$30,000 per year with fine prospects for advancement. Excellent research facilities. Applicants must be U.S. citizens. Send curriculum vitae and graduate transcripts, and arrange for three letters of recommendation to be sent to: **Dr. Y. Pomeranz, Director, U.S. Grain Marketing Research Laboratory, 1515 College Avenue, Manhattan, Kans. 66502.**


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TUMOR IMMUNOBIOLOGIST—The Department of Pediatrics, Southern Illinois University (SIU) School of Medicine, invites applications for an assistant professor, nontenure-track faculty position. Ph.D. in immunology or related field required. Applicants may have research experience in one or more of the following areas: surface antigens or tumor cells, polyamines, natural resistance, bone marrow transplantation. Send curriculum vitae and description of research abilities to: **L. G. Thatcher, M.D., Chairman, Department of Pediatrics, SIU School of Medicine, P.O. Box 3926, Springfield, Illinois 62708. SIU School of Medicine is an Equal Opportunity/Affirmative Action Employer.** Applications will be accepted until 15 February 1985 or until position is filled.



UNIVERSITY OF CAPE TOWN

Lectureship or Senior Lectureship in Archaeology

Applications are invited for the above post, vacant from 1 March, 1985. Candidates should be qualified in archaeometry (ie science-based archaeology) or in a branch of science closely allied to it. The appointee will teach archaeometry at undergraduate and postgraduate level and conduct research as a member of the Archaeometry Research Group.

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The University's policy is not to discriminate on the grounds of sex, race or religion. Further information on the implementation of this policy is obtainable on request.

FSR 0802

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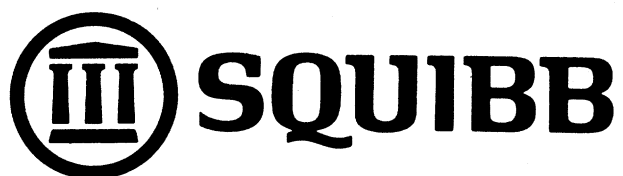
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For further information and a detailed registration brochure, contact:

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Qualified candidates should send their resume including salary requirements in confidence to: **The Squibb Institute for Medical Research, Employment Office, Department #122, P.O. Box 4000, Princeton, NJ 08540.** We will accept direct applicant responses only. An equal opportunity employer.

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The position requires collaboration and interaction with the Cardiovascular Section of Medicinal Chemistry, other Sections of the Department of Biological Research as well as the Development Department functions and other parts of the R&D Division, such as Clinical Research, Regulatory Affairs and etc.

Consideration for this position requires a Ph.D. in Cardiovascular Pharmacology or Physiology and 5-10 years postdoctoral experience in the Cardiovascular area. In addition, the candidate needs to possess good interpersonal and communication skills, both oral and written. Further, the candidate must have demonstrated scientific leadership and the ability to manage a research team, preferably in an industrial setting.

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POSTDOCTORAL FELLOWSHIP in soil ecology is available for 3 years beginning spring 1984 to study trophic interactions among microbes, protozoans, nematodes, and microarthropods. The objective of the research is to understand factors controlling the stability and dynamics of detrital food webs. Research experience with soil fauna required. Send statement of research interests, résumé, and the names of three references to: **Dr. H. W. Hunt, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colo. 80523.**

Colorado State University is an Equal Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Services Building, Colorado State University, Fort Collins, Colo. 80523.

PREDOCTORAL FELLOWSHIPS IN BIOMEDICAL AND PHYSICAL SCIENCES

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The University of Illinois announces the availability of Ph.D. graduate fellowships for interdisciplinary training in molecular biology of infectious diseases. Successful candidates will have the opportunity to study and work with distinguished faculty in the Departments of Animal Science, Biochemistry, Microbiology, and Veterinary Pathobiology. Faculty interests encompass basic and applied research in molecular genetics of bacteria, viruses, and parasites as well as molecular immunology and immunogenetics. The curriculum will emphasize molecular biology and will be tailored to the department or area of the student's interest. In addition to dissertation research with a selected faculty member, students will have access to other laboratories via special research projects as well as an opportunity for instruction in our campus-wide Genetic Engineering and Hybridoma/Flow Cytometry Laboratories.

To qualify, individuals must be a U.S. citizen with an excellent scholastic record and have a B.S. degree in some area of biology. Postbaccalaureate, graduate training, or other relevant experience will be favorably considered. Individuals with D.V.M. or M.D. degrees are also encouraged to apply. The selected candidates will receive a 12-month stipend of \$15,000 plus a tuition and fees waiver.

Applications will be considered at any time for the 1985-1986 academic year. Interested applicants should forward résumés and three letters of reference to: **Dr. Wayne A. Tompkins, Department of Veterinary Pathobiology, University of Illinois, 2001 South Lincoln Avenue, Urbana, Illinois 61801.**

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POSTDOCTORAL FELLOWS—CARDIOVASCULAR

NIH fellowships presently available in cardiovascular pharmacology. Research areas include: Membrane biology and biophysics, ion channels; Ca^{2+} control in vascular, cardiac and skeletal muscle cells, x-c coupling, secretory and platelet activation; hormone receptors; drug modification of cellular control systems. Very active productive group. Write: **Dr. A. H. Caswell, Department of Pharmacology (R-189), University of Miami School of Medicine, P. O. Box 016189, Miami, Florida 33101. An Equal Opportunity/Affirmative Action Employer.**

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PREDOCTORAL AND POSTDOCTORAL TRAINING IN HUMAN CANCER BIOLOGY AT THE UNIVERSITY OF WISCONSIN

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For information, write:

**Chairman, Graduate Steering Committee
Department of Human Oncology
K4/310 Clinical Sciences Center
600 Highland Avenue
Madison, Wis. 53792**

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GRADUATE STUDY IN BIOCHEMISTRY

GRADUATE ASSISTANTSHIPS IN BIOCHEMISTRY leading to the Ph.D. degree are available for the 1985-1986 academic year. The department has a challenging academic and vigorous research program in a broad range of biochemical disciplines. Stipends for 12-month appointments begin at \$7600. Write: **Director, Graduate Admissions, Department of Biochemistry, The University of Texas Health Sciences Center, San Antonio, Texas 78284. An Equal Opportunity/Affirmative Action Employer.**

University of Rochester School of Medicine and Dentistry GRADUATE STUDIES IN TOXICOLOGY

We have a **National Institute of Environmental Health Sciences training grant** in environmental toxicology that supports students studying for the Ph.D. degree. We seek highly qualified students who wish to enter this important field. If you have strong enough credentials to be accepted, you will receive a stipend and your tuition will be paid. The five or six students accepted each year, together with more than 25 faculty members, do research in such areas as biochemical, cellular/molecular, neurobehavioral, developmental, and inhalation toxicology. Please contact: **Dr. Victor G. Laties, Director, or Maira Zuika, Coordinator, Toxicology Training Program, Division of Toxicology, Box RBB, University of Rochester Medical Center, Rochester, N.Y. 14642; telephone: 716-275-5926. Equal Opportunity/Affirmative Action Employer.**

ASSISTANTSHIPS

Graduate Student Positions at the University of Cincinnati College of Medicine Department of Anatomy and Cell Biology

Several **GRADUATE ASSISTANTSHIPS** with stipend and full remission of tuition and fees are available in the Department of Anatomy and Cell Biology at the University of Cincinnati College of Medicine. The department has a faculty with diverse research interests with a strong emphasis in cellular, developmental, molecular, and neurobiology. Funded research programs include cell-cell interactions and cell junctions; electron microscopy and metabolism of liver function and of muscle; molecular genetics, DNA replication and gene cloning; teratocarcinoma differentiation; and neurobiology.

The philosophy of the department is to train the student to become proficient in teaching one or more of the anatomical disciplines and to develop and pursue a competitive research program.

Inquiries should be sent to: **Dr. Peter J. Stambrook, Department of Anatomy and Cell Biology, University of Cincinnati College of Medicine, 231 Bethesda Avenue, M.L. Number 521, Cincinnati, Ohio 45267.**

ASSISTANTSHIPS

TEACHING ASSISTANTSHIPS available for qualified applicants beginning September 1985 include tuition waiver, which includes 1985 summer courses, and 9-month stipends. Graduate study in Department of Biology leading to M.S. or Ph.D. with concentration in biochemistry, botany, ecology, marine biology, microbiology, molecular biology, physiology, vertebrate zoology. For further information, write to: **Graduate Director, Department of Biology, Northeastern University, Boston, Mass. 02115. Northeastern is an Equal Opportunity/Affirmative Action/Title IX Employer.**

ASSISTANTSHIPS

GRADUATE RESEARCH ASSISTANTSHIPS in ecology available to Ph.D. candidates for 3 years beginning spring 1984 to study trophic interactions among microbes, protozoans, nematodes, and microarthropods in soil. One position will entail an emphasis on simulation modeling. Annual stipend is \$7400 plus tuition. Send statement of research interests, résumé, and the names of three references to: **Dr. H. W. Hunt, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colo. 80523.**


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The Program in Social Ecology has 28 full-time faculty members who adopt a multidisciplinary approach to problems of criminal justice, environmental analysis and psychology and social behavior. The Program grants the B.A., M.A. and Ph.D. degrees. Faculty include: lawyers; environmental, developmental and community psychologists; sociologists; planners; and environmental scientists.

The Director reports to The Vice Chancellor and is responsible for the administrative management of the Program including its budget.

To ensure consideration, please send nominations or applications (including a curriculum vitae, brief letter, and the names of five references) by March 15, 1985 to:

**Search Committee—Director of Social Ecology
c/o Dr. Harriet Press
Office of Academic Affairs
515 Administration
University of California Irvine, California 92717**

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SCIENTIST/PROJECT SCIENTIST

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

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The applicant should have outstanding professional credentials in one or more of the following environmental disciplines: environmental chemistry, ecology, atmospheric science, soil science, hydrology, measurement science, environmental policy analysis and assessment.

A doctorate (or equivalent) with recognized achievement in an associated scientific discipline is required. Will have demonstrated strong leadership in dealing with funding agencies; in the management of a large science oriented organization; in the development and maintenance of new high quality programs. Experience will include administering diverse programs in basic and applied research and assessment areas; interaction with academia, government and industry; and attainment of a high degree of knowledge of environmental research programs and the opportunities for new initiatives.

The successful applicant will have programmatic authority over all environmental research and assessment programs throughout ANL. Will have overall responsibility for assuring research quality and will be the primary contact within Argonne National Laboratory for all sponsors of environmental research. Will have line management authority over the Environmental Research Division with a staff of 75. Will approve all research initiatives in his/her area and approve the allocation of all environmental funds.

A competitive salary, benefit and relocation package will be offered to the successful candidate. For further consideration by the Search Committee, please send your employment credentials to appointment officer by February 28, 1985:



**Mr. Ronald A. Johns
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Argonne National Laboratory
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