

(D. Eckstein *et al.*), and several unpublished studies are reported. Finally, some indirect methods and models for determining population structure by means of tree size are reviewed (S. del Amo Rodríguez and J. Nieto de Pascual; K. D. Singh; N. Enright and G. Harts-horn).

Perhaps the most significant results of the workshop are the recommendations for future research. Trees are the longest-lived individuals on our planet. Their slow growth and long reproductive cycles have inhibited the study of them in this age of short-term grant support and the need for quick research results. Only prolonged and sustained studies will offer a solution to the challenge of utilizing our tropical forests without simultaneously destroying them. The book's appeal for a coordinated international effort with modest but, more important, sustained support for individual researchers should be heard.

JACK B. FISHER

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Books Received

Algebraic K-Theory. Proceedings of a conference, Evanston, Ill., Mar. 1980. E. M. Friedlander and M. R. Stein, Eds. Springer-Verlag, New York, 1981. vi, 518 pp., illus. Paper, \$27. Lecture Notes in Mathematics, vol. 854.

Alternative Energy Sources II. Proceedings of a conference, Miami Beach, Dec. 1979. T. Nejat Veziroglu, Ed. Hemisphere, Washington, D.C., 1981. Nine volumes. 1-3, Solar Energy. Vol. 4, Indirect Solar Energy. Vol. 5, Geothermal Power/Energy Program. Vol. 6, Nuclear Energy. Vol. 7, Hydrocarbon Conversion. Vol. 8, Hydrogen Energy. Vol. 9, Conservation, Economics, and Policy; Index. xciv, 4172 pp., illus. \$595.

Amino Acid Analysis. Papers from a symposium, Edinburgh, June 1979. J. M. Rattenbury, Ed. Horwood, Chichester, England, and Halsted (Wiley), New York, 1981. 380 pp., illus. \$89.95.

Analysis of Non-Metals in Metals. Proceedings of a conference, Berlin, June 1980. Günther Kraft, Ed. Walter de Gruyter, New York, 1981. xiv, 546 pp., illus. \$87.50.

Annual Reports on NMR Spectroscopy. Vol. 11A. G. A. Webb, Ed. Academic Press, New York, 1981. x, 282 pp., illus. \$84.

Annual Review of Biochemistry. Vol. 50. Esmond S. Snell, Paul D. Boyer, Alton Meister, and Charles C. Richardson, Eds. Annual Reviews, Palo Alto, Calif., 1981. xvi, 1180 pp., \$21.

Annual Review of Nutrition. Vol. 1. William J. Darby, Harry P. Broquist, and Robert E. Olson, Eds. Annual Reviews, Palo Alto, Calif., 1981. xiv, 510 pp. \$20.

Annual Reviews Reprints. Cell Membranes, 1978-1980. L. J. Mullins, compiler. Annual Reviews, Palo Alto, Calif., 1981. x, 890 pp., illus., \$28.

Benefit-Cost Analysis of Air-Pollution Control. Robert Halvorsen and Michael G. Ruby, Lexington (Heath), Lexington, Mass., 1981. xviii, 266 pp. \$26.95.

The Bereaved Child. Analysis, Education and Treatment. An Abstracted Bibliography. Gillian S. Mace, Faren R. Akins, and Dianna L. Akins. IFI/Plenum, New York, 1981. viii, 284 pp. \$75. IFI Data Base Library.

Biobehavioral Aspects of Aggression. David A. Hamburg and Michelle B. Trudeau, Eds. Liss, New York, 1981. xii, 288 pp. \$38.

Biochemical Education. Charles F. A. Bryce, Ed. Croom Helm, London, 1981 (U.S. distributor, Biblio, Totowa, N.J.). 220 pp., illus. \$32.50.

Biochemical Engineering II. Papers from a conference, Henniker, N.H., July 1980. A. Constantinides, W. R. Vieth, and K. Venkatasubramanian, Eds.

New York Academy of Sciences, New York, 1981. viii, 384 pp., illus. Cloth or paper, \$73. *Annals of the New York Academy of Sciences*, vol. 369.

Cases, Materials and Problems on Bioethics and the Law. Michael H. Shapiro and Roy G. Spece, Jr. West, St. Paul, Minn., 1981. i, 892 pp. \$23.95. American Casebook Series.

Child Maltreatment. A Handbook for Mental Health and Child Care Professionals. Arthur H. Green. Aronson, New York, 1980. xii, 314 pp. \$25.

Children of Separation and Divorce. Management and Treatment. Irving R. Stuart and Lawrence Edwin Abt, Eds. Van Nostrand Reinhold, New York, ed. 2, 1981. xviii, 366 pp. \$19.50.

Chromosomes Today. Vol. 7. Proceedings of a conference, Oxford, England, Aug. 1980. M. D. Bennett, M. Bobrow, and G. Hewitt, Eds. Allen and Unwin, Boston, 1981. xxvi, 310 pp., illus. \$38.50.

The Clever Hans Phenomenon. Communication with Horses, Whales, Apes, and People. Papers from a conference, May 1980. Thomas A. Sebeok and Robert Rosenthal, Eds. New York Academy of Sciences, New York, 1981. viii, 312 pp., illus. Cloth or paper, \$60. *Annals of the New York Academy of Sciences*, vol. 364.

The Directory of Possibilities. Colin Wilson and John Grant, Eds. Rutledge Press, New York, 1981. 256 pp., illus. Cloth, \$14.95; paper, \$9.95.

Divine and Contingent Order. Thomas F. Torrance. Oxford University Press, New York, 1981. xii, 162 pp. \$27.95.

Dynamic Modelling and Control of National Economies. Proceedings of a conference, Warsaw, June 1980. J. M. L. Janssen, L. F. Pau, and A. J. Straszak, Eds. Published for the International Federation of Automatic Control by Pergamon, New York, 1981. xiv, 418 pp., illus. \$90. IFAC Proceedings Series.

The Ecology of Burchids Attacking Legumes (Pulses). Proceedings of a symposium, Tours, France, Apr. 1980. V. Labeyrie, Ed. Junk, The Hague, 1981 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xiv, 234 pp., illus. \$63. Series Entomologica, vol. 19.

The Ecology of Early Deafness. Guides to Fashioning Environments and Psychological Assessments. Edna Simon Levine. Columbia University Press, New York, 1981. xvi, 422 pp., illus. \$27.50.

Economics, Ethics, Ecology. Roots of Productive Conservation. Papers from a meeting, Dearborn, Mich., Aug. 1980. Walter E. Jeske, Ed. Soil Conservation Society of America, Ankeny, Iowa, 1981. xiv, 454 pp. Paper, \$10.

Electromagnetic Induction in the Earth and Moon. Papers from a symposium, Seattle, Aug. 1977. U. Schmucker, Ed. Center for Academic Publications, Tokyo, and Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). x, 202 pp., illus. \$26.50. Advances in Earth and Planetary Sciences 9. Supplement issue to *Journal of Geomagnetism and Geoelectricity*.

Electron Correlation and Magnetism in Narrow-Band Systems. Proceedings of a symposium, Mount Fuji, Japan, Nov. 1980. T. Moriya, Ed. Springer-Verlag, New York, 1981. xiv, 258 pp., illus. \$34.50. Springer Series in Solid-State Sciences, 29.

The Function of Red Blood Cells. Erythrocyte Pathobiology. Proceedings of a symposium, Bost. Apr. 1980. Donald F. H. Wallach, Ed. Liss, New York, 1981. xiv, 390 pp., illus. \$38. Progress in Clinical and Biological Research, vol. 51.

Fundamental Problems in the Theory of Stellar Evolution. Papers from a symposium, Kyoto, Japan, July 1980. Daichiro Sugimoto, Donald Q. Lamb, and David N. Schramm, Eds. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 348 pp., illus. Cloth, \$47.50; paper, \$21. International Astronomical Union Symposium No. 93.

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The Haplochromine Fishes of the East African Lakes. Collected Papers on Their Taxonomy, Biology and Evolution (with an Introduction and Species Index). P. H. Greenwood. Cornell University Press, Ithaca, N.Y., 1981. vi, 840 pp., illus. \$65.

Health Care and Society. Arnold Birenbaum. Alanheld, Osmun, Montclair, N.J., 1981. x, 262 pp., illus. \$28.50. LandMark Studies.

Health Education. An Annotated Bibliography on Lifestyle, Behavior, and Health. Marion C. Chafetz. Plenum, New York, 1981. 272 pp. \$29.50.

High Voltage Vacuum Insulation. The Physical Basis. R. V. Latham. Academic Press, New York, 1981. xiv, 246 pp., illus. \$38.

Higher Geometry. N. V. Efimov. Translated from the Russian edition (1978) by P. C. Sinha. Mir,

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Hospice. Complete Care for the Terminally Ill. Jack McKay Zimmerman with contributions by Paul S. Dawson, Kathleen Anne Roche, and Gloria R. Cameron. Urban & Schwarzenberg, Baltimore, 1981. xvi, 192 pp. \$19.

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An Introduction to Nonlinear Oscillations. Ronald E. Mickens. Cambridge University Press, New York, 1981. xvi, 224 pp., illus. \$69.

Introduction to the History of Plant Pathology. G. C. Ainsworth. Cambridge University Press, New York, 1981. xii, 316 pp., illus. \$59.50.

Lasers and Applications. Proceedings of a symposium, Rio de Janeiro, Brazil, June 1980. W. O. N. Guimaraes, C.-T. Lin, and A. Mooradian, Eds. Springer-Verlag, New York, 1981. x, 338 pp., illus. \$34. Springer Series in Optical Sciences, 26.

Lasers and Chemical Change. A. Ben-Shaul, Y. Haas, K. L. Kompa, and R. D. Levine. Springer-Verlag, New York, 1981. xii, 498 pp., illus. \$44.50. Springer Series in Chemical Physics, vol. 10.

Legal Aspects of Solar Energy. John H. Minan and William H. Lawrence, Eds. Lexington (Heath), Lexington, Mass., 1981. xvi, 236 pp., illus. \$23.95.

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The Marine Environment and Structural Design. John Gaythwaite. Van Nostrand Reinhold, New York, 1981. xviii, 314 pp., illus. \$22.50.

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Nonlinear Finite Element Analysis in Structural Mechanics. Proceedings of a workshop, Bochum, Germany, July 1980. W. Wunderlich, E. Stein, and K.-J. Bathe, Eds. Springer-Verlag, New York, 1981. xiv, 778 pp., illus. \$44.50.

Origin of Life. Proceedings of a meeting, Jerusalem, June 1980. Yechezkel Wolman, Ed. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 614 pp., illus. \$73.50.

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Perceptual Organization. Papers from a symposium, Nov. 1977. Michael Kubovy and James R. Pomerantz, Eds. Erlbaum, Hillsdale, N.J., 1981. xvi, 506 pp., illus. \$29.95.

A Perspective of Physics. Vol. 4. Selections from 1979 *Comments on Modern Physics*. Introduced by Harrie Massey. Gordon and Breach, New York, 1981. xxxiv, 350 pp., illus. \$45.


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Perspectives on the Study of Speech. Peter D. Eimas and Joanne L. Miller, Eds. Erlbaum, Hillsdale, N.J., 1981. xii, 348 pp., illus. \$29.95.

Philosophy in Economics. Papers from a workshop, Blacksburg, Va., Apr. 1979. Joseph C. Pitt, Ed. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). x, 212 pp. Cloth, \$34; paper,

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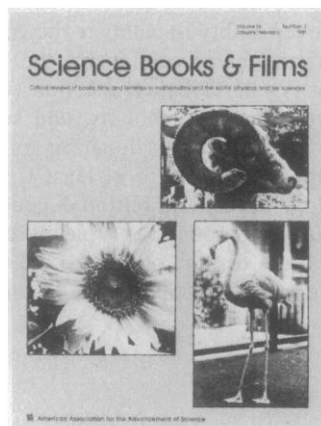
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\$14.95. University of Western Ontario Series in Philosophy of Science, vol. 16.

The Ruminant Immune System. Proceedings of a symposium, Plymouth, N.H., July 1980. John E. Butler, J. Robert Duncan, and Klaus Nielson, Eds. Plenum, New York, 1981. xxiv, 892 pp., illus. \$85. Advances in Experimental Medicine and Biology, vol. 137.

Rural Technology. Amulya Kumar N. Reddy, Ed. Indian Academy of Sciences, Bangalore, 1980. vi, 330 pp., illus. \$20. Academy Publications in Engineering Sciences, vol. 3. Reprinted from *Proceedings of the Indian Academy of Sciences, Section C*, vol. 2.

Sago. The Equatorial Swamp as a Natural Resource. Proceedings of a symposium, Kuala Lumpur, Malaysia, Sept. 1979. W. R. Stanton and M. Flach, Eds. Nijhoff, The Hague, 1980 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xiv, 244 pp., illus. \$44.50. World Crops, vol. 1.

Sampling Methods for Censuses and Surveys. Frank Yates. Macmillan, New York, ed. 4, 1981. xvi, 458 pp. \$55.

Science and the Question of Human Equality. Papers from a symposium, Houston, Jan. 1979. Margaret S. Collins, Irving W. Wainer, and Theodore A. Bremner, Eds. Published for the American Association for the Advancement of Science by Westview, Boulder, Colo., 1981. xvi, 158 pp. \$16.50. AAAS Selected Symposia Series, 58.

Science, Ideology, and World View. Essays in the History of Evolutionary Ideas. John C. Greene. University of California Press, Berkeley, 1981. x, 202 pp. Cloth, \$16.50; paper, \$5.95.

Sedimentary Petrology. An Introduction. M. E. Tucker. Halsted (Wiley), New York, 1981. viii, 252 pp., illus. Paper, \$29.95. Geoscience Texts, vol. 3.

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Solvability of Nonlinear Equations and Boundary Value Problems. Svatopluk Fučík. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xiv, 390 pp. \$29.95. Mathematics and Its Applications, vol. 4.

Testing for Effects of Chemicals on Ecosystems. National Academy Press, Washington, D.C., 1981. xvi, 104 pp., illus. Paper, \$6.25.

Thermoreception and Temperature Regulation. H. Hensel. Academic Press, New York, 1981. x, 324 pp., illus. \$48.50. Monographs of the Physiological Society No. 38.

Those of the Gray Wind. The Sandhill Cranes. Paul A. Johnsgard. St. Martin, New York, 1981. x, 116 pp., illus. \$8.95.

Tissue Repair and Regeneration. L. E. Glynn, Ed. Elsevier/North-Holland, New York, 1981. xxii, 598 pp., illus. \$136.50. Handbook of Inflammation, vol. 3.

Toward a Psychology of the Scientist. Implications of Psychological Research for Contemporary Philosophy of Science. Sonja C. Grover. University Press of America, Lanham, Md., 1981. x, 92 pp. Cloth, \$16; paper, \$7.50.

Underwater Physiology VII. Proceedings of a symposium. Arthur J. Bachrach and Mary Margaret Matzen, Eds. Undersea Medical Society, Bethesda, Md., 1981. xxxii, 912 pp., illus. \$60.

Universal Algebra. P. M. Cohn. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 414 pp. Cloth, \$44.50; paper, \$19.50. Mathematics and Its Applications, vol. 6.

The Urban Climate. Helmut E. Landsberg. Academic Press, New York, 1981. x, 278 pp., illus. \$29.50. International Geophysics Series, vol. 28.

The Ureter. Harry Bergman, Ed. Springer-Verlag, New York, ed. 2, 1981. xviii, 780 pp., illus. \$78.50.

U.S. Policy and Low-Intensity Conflict. Potentials for Military Struggles in the 1980s. Papers from a workshop, Chicago, Nov. 1979. Sam C. Sarkesian and William L. Scully, Eds. Transaction Books, New Brunswick, N.J., 1981. viii, 222 pp. Paper, \$9.95.

Work and Retirement. A Longitudinal Study of Men. Herbert S. Parnes, Ed. MIT Press, Cambridge, Mass., 1981. xxiv, 294 pp., illus. \$27.50.

Workshop on the Role of Earthworms in the Stabilization of Organic Residues. Vol. 1. Proceedings. Kalamazoo, Mich., Apr. 1980. Mary Appelfhof, Ed. Beech Leaf Press (Kalamazoo Nature Center), Kalamazoo, Mich., 1981. xxvi, 316 pp., illus. Paper, \$25.

X-Ray Astronomy with the Einstein Satellite. Proceedings of a meeting, Cambridge, Mass., Jan. 1980. Riccardo Giacconi, Ed. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.) viii, 330 pp., illus. \$44.50. Astrophysics and Space Science Library, vol. 87.

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ASSISTANT PROFESSOR OF MICROBIOLOGY

A nontenure position is available for a person to teach microbiology, bacteriology, and immunology and to advise students in the Medical Technology Program. The main emphasis of the position is teaching but the candidate must be willing to supervise undergraduate research. Ph.D. required. The initial appointment is for 1 year beginning September 1982, with the possibility of renewal for two additional years. Send résumé, three letters of recommendation, and complete transcripts to: Dr. Clyde Houseknecht, Acting Chairman, Department of Biology, Wilkes College, Wilkes-Barre, Pa. 18766. Applications will be accepted until 15 December 1981. *Wilkes College is an Affirmative Action/Equal Opportunity Employer.*

BACTERIOLOGIST. Tenure-track position for assistant professor in the Department of Biology. Broadly trained bacteriologist expected to develop and maintain a vigorous, externally funded program of research in microbial ecology or physiology. Start-up funds will be provided. Teaching responsibilities include a course in general microbiology. Send curriculum vitae and letters of recommendation before 15 December 1981 to: Dr. D. L. Rohlfing, Department of Biology, University of South Carolina, Columbia, S.C. 29208. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSORSHIPS. Analytical chemistry (assistant/associate) and organic chemistry (assistant) tenure-track positions. Applicants for these tenure-track positions must be committed to excellence in research and teaching. Areas of research should complement those presently represented in the department. Candidates should send complete curriculum vitae, which includes a description of future research plans, and a documented summary of past accomplishments, and arrange to have at least three letters of recommendation sent to: **Chairman, Search Committee, Department of Chemistry, State University of New York at Buffalo, Buffalo, New York 14214-3094.** Deadline for applications is 30 November 1981. *The Department of Chemistry is particularly interested in considering applications from women, ethnic minorities, or handicapped persons. State University of New York at Buffalo is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR (TENURE-TRACK)

The Basic Sciences Division of the Faculty of Medicine invites applications from investigators interested in cell biology. The successful applicant will have had sufficient background in research to justify presentation to a national agency for career support. The appointee will be given a tenure-track position. Only Canadian or Landed Immigrants to Canada need apply for this position. Currently, research grouping in the Basic Sciences Division exist in neurosciences, immunology, human genetics, molecular biology, endocrinology and metabolism, cardiovascular sciences, gastroenterology, and environmental studies. Salary will be dependent upon background and according to university scales.

Interested applicants should send complete curriculum vitae, a list of publications, and the names of three referees to:

Bruce H. Sells, Ph.D.
Associate Dean, Basic Medical Sciences
Faculty of Medicine
Memorial University of Newfoundland
St. John's, Newfoundland, Canada A1B 3V6

BIOCHEMISTRY DEPARTMENT UNIVERSITY OF WISCONSIN-MADISON

Applications are invited for a faculty position in the Department of Biochemistry, University of Wisconsin-Madison. The rank of the appointment is for an assistant or associate professor and individuals at all academic levels are encouraged to apply. Candidates must have research interests and experience in nucleic acid biochemistry; but, within this broad area, emphasis will be placed on selecting an outstanding individual. The successful applicant will be expected to develop a substantial independent research program, to teach in the Biochemistry Department's curriculum, and to supervise graduate students. Salary will be on a 12-month basis at a level that is commensurate with qualifications and experience and compatible with the salary structure of the University of Wisconsin system. *Women and minority candidates are especially encouraged to apply.* Send detailed curriculum vitae, including a statement of research accomplishments and interests and the names of three references, to: **H. F. DeLuca, Chairman, Department of Biochemistry, University of Wisconsin, Madison, Wis. 53706,** before 1 December 1981. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

COMMUNICATIONS—Agricultural Experiment Station Editor. Provide leadership for developing news media releases and publications for the Kansas Agricultural Experiment Station. Report research findings through the development of news and feature articles for the mass media. Direct and coordinate planning, editing, printing, and distribution of scientific and popular publications. Write scripts for slide sets. Supervise an assistant editor responsible for editing research manuscripts and research proposals. Master's degree and demonstrated skill and practical experience in agricultural writing, editing, and photography required. Strong agricultural background, at least 3 years of experience writing news and feature articles for newspapers and magazines, knowledge of printing process, and Ph.D. desirable. Salary commensurate with training and experience. Deadline is 20 November 1981. Send a letter of application, résumé, samples of your work, three letters of recommendation, and academic transcripts to: **Jim L. Ozbun, Director of Research, Waters Hall 113, Kansas State University, Manhattan, Kansas 66506.** *Equal Opportunity Employer.*

POSITIONS OPEN

BIOCHEMIST. We are seeking a membrane protein biochemist to fill a research position supported by an ongoing NIH Program Project in Liver Metabolism. The project involves isolation, purification, and characterization of cytochromes P-450 from rat liver [*J. Biol. Chem.* 256, 6060-6068 (1981)]. Level of the position (research assistant professor/research associate/postdoctoral fellow) and salary will be commensurate with experience. Those interested should apply by sending curriculum vitae and names and addresses of three references to: **Dr. Philip S. Guzelian, Medical College of Virginia, Department of Medicine, Box 267, MCV Station, Richmond, Virginia 23298.** *An Equal Opportunity/Affirmative Action Employer.*

BIOMEDICAL RESEARCH LABORATORY ANIMAL TECHNICIAN. Opening for biomedical research laboratory animal technician. The applicant accepted will assume primary responsibility for a new research facility specially designed to meet current AAALAC requirements. Desired qualifications include: B.S. degree in biology, physiology, or other medical specialties; certification as an AALAS technologist (or eligibility for certification); and experience. Salary dependent upon qualifications. Send résumé to: **Personnel Department, Arizona State University, Tempe, Arizona 85281.**

CELL BIOLOGY FACULTY POSITIONS

The Department of Anatomy at Georgetown University, Washington, D.C., invites applications for two tenure-track faculty positions at the assistant/associate professor level, starting 1 July 1982. Applicants must have a Ph.D., M.D., or D.D.S. degree, 2 or 3 years of postdoctoral experience, and demonstrated excellence in their respective fields. Persons with research experience in cytoskeleton motility or membrane biology are encouraged to apply, although applications from candidates in other areas of cell and molecular biology are welcomed. Successful candidates will be expected to pursue a vigorous research program capable of attracting extramural funding and to participate in teaching medical, dental, and graduate students.

Persons interested in these positions should send a copy of their curriculum vitae, copies of two or three important publications, names of three referees, and a brief statement outlining their research objectives to:

Dr. Martin Dym, Chairman
Department of Anatomy, Box 301
Georgetown University
School of Medicine—School of Dentistry
3900 Reservoir Road, NW
Washington, D.C. 20007

Deadline for application receipt is 1 January 1982; anticipated starting date is 1 July 1982. *Georgetown University is an Affirmative Action/Equal Opportunity Employer.*

CELL BIOLOGIST

The University of North Carolina at Chapel Hill invites applications for a junior or senior faculty position in the Department of Anatomy and Laboratories for Cell Biology. Applicants should have postdoctoral research experience and demonstrated excellence in any area of cell biology. Preference will be given to research in cell surface or membrane biology, cellular neurobiology, or biology of the cytoskeleton. Teaching opportunities will be in medical histology, neurobiology, human gross anatomy, or graduate level cell biology. Send curriculum vitae, a brief description of research plans, and the names of three references to: **Dr. Charles R. Hackenbrock, Chairman, Department of Anatomy, School of Medicine, 111 Swing Building 217H, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514.**

An Equal Opportunity/Affirmative Action Employer

CHAIR, Department of Biological Sciences SAN FRANCISCO STATE UNIVERSITY

Applications are invited from individuals with a doctorate in biological sciences and competence in teaching, research, and administration for chair of department of 40 faculty serving 800 majors. Curricula lead to B.A., B.S., and M.A. degrees. Candidates should be committed to research development and excellence in teaching. Salary up to \$42,120, commensurate with experience. Applications, including curriculum vitae, résumé of personal goals, and three references should be sent to: **Dr. B. J. Davis, Department of Biological Sciences, San Francisco State University, 1600 Holloway Avenue, San Francisco, Calif. 94132.** Deadline: 15 January 1982. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

RALPH M. PARSONS CHAIR IN CHEMICAL ENGINEERING

University of California, Los Angeles (UCLA), invites applications and nominations for the Ralph M. Parsons Chair in Chemical Engineering. Candidates should have a doctoral degree in chemical engineering and outstanding national and international leadership recognition by peers in research and the chemical engineering profession.

Applications and nominations, including curriculum vitae, bibliography, and the names and addresses of three references, should be sent to: **Dr. F. Eugene Yates, Chairman, Search Committee for the Ralph M. Parsons Chair in Chemical Engineering, Boelter Hall 6417, UCLA, Los Angeles, California 90024.** *UCLA is an Equal Opportunity/Affirmative Action Employer.*

DEPARTMENT CHAIRPERSON: The Department of Chemistry at the University of Rhode Island is seeking to fill the position of department chairperson beginning 1 July 1982. Candidates with a Ph.D. and a distinguished record of research and teaching in chemistry are invited to apply. Administrative experience enabling the candidate to vigorously lead a Ph.D.-granting department with 50 graduate students and 17 faculty is also desirable. Interested applicants should send curriculum vitae, a letter of application, including a statement of specific interest in the position, current professional goals, and the names of three references by 15 December 1981 to: **Professor James L. Fasching, Chairman of Search Committee, Department of Chemistry, Pastore Chemical Laboratory, UNIVERSITY OF RHODE ISLAND, Kingston, Rhode Island 02881.** *An Affirmative Action/Equal Opportunity Employer, M/F.*

DEAN, SCHOOL OF ALLIED HEALTH PROFESSIONS—University of Wisconsin-Milwaukee (UWM). Undergraduate and graduate programs in speech pathology and audiology; undergraduate programs in allied health, medical technology, and occupational therapy. Graduate programs in human kinetics and medical technology pending. As chief executive officer, the dean is responsible for overall program, facilities, personnel, and budget administration, and continued development of school at a Ph.D.-granting urban campus with enrollment of over 26,000 students. The dean also works with clinical faculty in facilities not part of university system. Qualifications desired: administrative, teaching, clinical, and research experience; doctorate. Candidate must qualify for tenure at UWM and must be available for employment not later than 1 July 1982. Salary is competitive. Applications and nominations with curriculum vitae and at least three references should be sent before closing date (30 January 1982) to:

Dr. Ralf W. Vanselow, Chairperson
Search and Screen Committee
Chemistry 343
The University of Wisconsin-Milwaukee
P.O. Box 413
Milwaukee, Wisconsin 53201
Telephone: 414-963-5223

An Equal Opportunity/Affirmative Action University—Title IX Employer

DIRECTOR OF METHODS for the American Oil Chemists' Society (AOCS). New, permanent position to develop a program to revise and maintain the AOCS Official and Tentative Methods, to maintain technical liaison with related scientific groups, and to coordinate the activities of AOCS technical committees. Experience in analytical chemistry, including fat and oil derivatives. Résumé to: **Search Committee, c/o Dr. E. G. Perkins, 508 South 6 Street, Champaign, Ill. 61820.**

ELECTRON MICROSCOPIST/CELL BIOLOGIST

The University of North Carolina at Chapel Hill invites applications for a junior or senior faculty position in the Department of Anatomy and Laboratories for Cell Biology. Applicants should have postdoctoral research experience and demonstrated excellence in electron microscopy and cell biology, preferably in the application of freeze fracture, energy dispersive analysis of x-rays (EDAX), or image reconstruction techniques. Duties will be to teach a graduate course in electron microscopy and to direct the departmental electron microscope facilities. Send curriculum vitae, a brief description of research plans, and the names of three references to: **Dr. Charles R. Hackenbrock, Chairman, Department of Anatomy, School of Medicine, 111 Swing Building 217H, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514.**

An Equal Opportunity/Affirmative Action Employer

DARTMOUTH COLLEGE
Department of Biological Sciences

The Department invites applications from all qualified persons for two positions:

- 1) **Developmental Biology of Animals**, assistant professor, tenure-track, 3-year initial appointment.
- 2) **Aquatic Ecology**, research instructor, two calendar years.

Each appointment begins 1 July 1982. Because of Dartmouth's dual commitment to education and scholarship, we seek persons with strength in both teaching and research.

Candidates for the position in developmental biology should have at least 2 years of postdoctoral experience. We expect the developmental biologist to teach a course in vertebrate embryology, an advanced course in his or her research area, as well as to participate in an introductory course in cell biology or organismal biology and in an active graduate research program.

Candidates for the position in ecology should have completed their Ph.D. by the start of the appointment. We expect the ecologist to teach a course in aquatic ecology and an advanced course or seminar in his or her research area, as well as to participate in an introductory course in ecology. The teaching obligation can be fulfilled in two of the four terms of the year, leaving half the year open for research at Dartmouth.

Applications for the positions should include full curriculum vitae, reprints of all publications, statements of proposed research and teaching activities, and the names of at least three referees from whom letters of recommendation have been requested. Applications and letters of recommendation should be sent by 1 December 1981 to:

Secretary
Search Committee
Department of Biological Sciences
Dartmouth College
Hanover, N.H. 03755

Dartmouth is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR
OF
THE FELS RESEARCH INSTITUTE
OF
WRIGHT STATE UNIVERSITY
SCHOOL OF MEDICINE

Wright State University, School of Medicine, is seeking nominations and applications for director of the Fels Research Institute. The Fels director will have the unique opportunity to lead the development of his or her area of expertise into a campus-wide research program. The director's research should be in an interdisciplinary area of human biology. Examples include, but are not limited to, neuroscience, bioengineering, nutrition, and cell membrane function. The director will serve as the scientific and administrative leader of the Institute, interface with the national and international scientific community, interact with the administration of the school and university officials, and coordinate development of research resources. The director must be eligible for appointment as professor in a medical school department, and must hold an M.D. or Ph.D. degree. The director must be recognized as an outstanding scientist with an ongoing, vigorous, and grant-supported research program. The director may participate in the teaching activities of the School of Medicine and the Biomedical Sciences Doctoral Program.

The position is available after July 1982 as negotiated. Send curriculum vitae, a brief statement of research accomplishments and plans, and the names and addresses of four references to:

Robert A. Weisman, Ph.D., Chairman
Search and Screen Committee
234 Biological Sciences Building
Wright State University
P.O. Box 927
Dayton, Ohio 45401

Applications should be received by 15 January 1982.

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

CORNELL UNIVERSITY
DIVISION OF
BIOLOGICAL SCIENCES

The new Section of Genetics and Development seeks three faculty members, to begin after 1 July 1982.

- 1) A **GENETICIST**, at either the assistant or associate professor level, to share the teaching of introductory genetics. Research on the molecular genetics of higher plants is of special interest, but any area of modern genetics will be considered.
- 2) Two **DEVELOPMENTAL BIOLOGISTS** at the assistant professor level.
 - a) A person with research interests in the molecular aspects of developmental biology, who will teach an undergraduate course in that area, and
 - b) A person with research interests in the developmental biology of invertebrates, who will develop an undergraduate course in invertebrate biology.

Successful candidates will be expected to maintain active research programs and participate in advanced instruction. Applicants with postdoctoral experience are preferred. Candidates should send curriculum vitae, a statement of research interests, and the names of three references. Please arrange to have letters of reference sent directly to the appropriate Search Committee, along with other materials, by 14 December 1981.

Dr. Stanley Zahler, Genetics Search Committee
or
Dr. Adrian Srb, Development Search Committee
Section of Genetics and Development
Bradfield Hall
Cornell University
Ithaca, New York 14853

Cornell University is an Equal Opportunity/Affirmative Action Employer.

DEPUTY DIRECTOR
INNOVATIVE SCIENCE/MATH
CURRICULUM DEVELOPMENT

Bank Street College in New York City, a pioneering institution in the field of innovative approaches to education, has been funded by the Department of Education for a multi-media project in science and mathematics education to include broadcast television, microcomputer software and videodisc experiments. The project has an immediate opening for an individual to oversee the design of an interdisciplinary, problem-solving curriculum in science/mathematics for the upper elementary grades and supervise its implementation. The position requires an advanced degree in one of the physical and/or natural sciences, experience in and/or commitment to innovative education, familiarity with curriculum design for grades 4-6, knowledge of the relevant technologies, and the administrative skill to coordinate with research and production efforts in an ambitious undertaking.

Salary: Negotiable, commensurate with education and experience.

Application should include:

- 1) A brief statement of qualifications for this project;
- 2) Complete curriculum vitae, including names of references;
- 3) Bibliography and reprints of relevant work, if available.

Send to:

Lorin A. Driggs
Project for Science/Math Education
Bank Street College
610 West 112th Street
New York, NY 10025

An Equal Opportunity/Affirmative Action Employer

INSTITUT NATIONAL DE LA RECHERCHE
SCIENTIFIQUE (INRS)
UNIVERSITÉ DU QUÉBEC
WASTEWATER TREATMENT

INRS, a constituent of the Université du Québec, is a research institute which offers academic programmes at the graduate level only; the official language of communication is French. Applications are invited for a tenure-track position in the area of wastewater treatment at INRS-Eau, a multidisciplinary water research centre located in Québec City. Housed in modern well-equipped facilities within the Québec Complexe scientifique, INRS-Eau is active in the fields of biology, chemistry, hydrology, meteorology, and water resources management.

The successful candidate will be expected to participate in on-going research projects within the Centre, assure the development of a strong research programme in wastewater treatment, and teach graduate courses; the approximate commitment is 80 percent research, 20 percent teaching. Doctorate, or the equivalent in published research, required in one of the following fields: sanitary, civil, or chemical engineering, biochemistry, bioengineering. Experience in multidisciplinary teaching and research is highly desirable, particularly in the areas of biotechnology or industrial microbiology. Appointment will be made at the rank of professor, associate professor, or assistant professor, depending on background and experience. Preference will be given to candidates with proven research and teaching capabilities. According to current employment and immigration policy, only Canadians or permanent residents should apply for this position. **Deadline: 15 December 1981.**

Refer to competition number SP 81-24. Send curriculum vitae and names of three references to:

Directeur du personnel
Institut national de la recherche scientifique
2700, rue Einstein
Case postale 7500
Sainte-Foy, Québec, Canada G1V 4C7

CSIRO
RADIO RESEARCH BOARD
AUSTRALIA
POSTDOCTORAL FELLOWSHIP
IN TELECOMMUNICATIONS

GENERAL: As part of its activities designed to foster research in telecommunications and radio science in the universities and other appropriate organizations, the Radio Research Board has established a fellowship scheme. Under this scheme one fellowship may be awarded each year for full-time research by scientists or engineers of exceptional promise and proven merit. These are postdoctoral awards tenable for a period of 2 years in an Australian university, approved research institute, or industrial laboratory as determined by negotiation between a prospective fellow and the Board. The agreed area of research will also be determined by negotiation but the Board is open to consider any proposal in the broad field of telecommunications and radio science.

QUALIFICATIONS: The applicants should have a Ph.D. degree or its equivalent, and be preferably under 30 years of age.

Radio Research Board Fellowships are available to applicants of all nationalities but they are asked to indicate their future plans.

STIPEND: A\$20,760 per annum, increased to A\$22,304 per annum at age 28 years. Stipend is subject to income tax.

ALLOWANCES: Payable in respect of a fellow's dependent spouse (A\$500 per annum), each dependent child (A\$200 per annum), "superannuation-like" payments (up to 10 percent of stipend), appropriate insurance coverage, and necessary travel expenses. Host institutions may be paid an allowance towards the cost of supporting the fellow.

APPLICATIONS: Persons interested in applying for the above fellowship should obtain application forms and a statement of the conditions from:

The Secretary
Radio Research Board
P.O. Box 225
Dickson, A.C.T. 2602, Australia

Applications close on 27 November 1981 and in the normal course of events candidates may expect to be advised on the outcome of their applications by the end of December 1981.

POSITIONS OPEN

CHAIR DEPARTMENT OF BIOLOGICAL SCIENCES RUTGERS UNIVERSITY

Rutgers-The State University of New Jersey, seeks a distinguished scholar to chair the Department of Biological Sciences in the newly reorganized Faculty of Arts and Sciences on the New Brunswick campus. The recent consolidation of the biological sciences into a unified department of 80 members offers a challenging opportunity for creative leadership. Candidates must have a strong commitment to research and graduate education. Nominations or applications (a letter of intent and curriculum vitae) should be submitted by 1 December 1981. Appointment effective 1 July 1982. Address correspondence to: Search Committee for Chair of Biological Sciences, Office of the Dean, Faculty of Arts and Sciences, Rutgers University, New Brunswick, N.J. 08903. Initial correspondence will be held in confidence. *Rutgers University is an Equal Opportunity/Affirmative Action Employer.*

COMPUTER CENTER DIRECTOR sought by the University of California (UC), San Francisco, for its Fresno-Central San Joaquin Valley Medical Education Program. The new computer center will support educational and research activities for approximately 100 faculty. The center will assist investigators in planning and conducting a diverse range of projects including biostatistical analyses, epidemiological surveys, health delivery comparisons, imaging, clinical algorithm development, and psychophysiological monitoring. Educational responsibilities will include not only familiarizing faculty, house staff, and other health professionals with computer applications in medicine, but also providing consultation to those with specific computer interests. Existing collaborations with local state university presents opportunities for participation of graduate students in computer science. Initial equipment includes VAX-11/750 and ample space in new educational building.

Applicants should possess advanced degree or considerable experience in computer sciences or closely related field and strong interest in biomedical science and clinical investigation. Experience with UNIX is highly desirable. Salary and academic appointment commensurate with experience.

Please direct inquiries to:

Howard Corbus, M.D.
Acting Associate Dean
UC Medical Education Program
2615 East Clinton Avenue
Fresno, Calif. 93703

The University of California is an Equal Opportunity Employer.

DEVELOPMENTAL BIOLOGIST. Tenure-track position, ASSISTANT PROFESSOR, beginning August 1982. Ph.D. or equivalent in some area of developmental biology. Primary responsibilities will be to teach embryology and human anatomy and to develop a course in specialty. May also teach laboratories in basic biology as needed. Strong commitment to teaching is required. Interest in maintaining an active research program is desired. Applicants should send résumé and names of three references to: Dr. Roger Lederer, Chair, Department of Biological Sciences, California State University, Chico, Calif. 95929. Application deadline is 1 February 1982. *An Affirmative Action Employer.*

FACULTY POSITION—MOLECULAR BIOLOGY/MOLECULAR GENETICS

Any level, tenure-track or tenured position, depending on qualifications. Our highest priority is to expand our ongoing research in the area of molecular biology with emphasis on the use of recombinant DNA techniques to study the dynamics of gene regulation in eukaryotes. We are part of the Detroit Medical Center, a consortium of hospitals, clinics, and one of the largest medical schools in the country. The Biochemistry Department is housed in modern, spacious, and well-equipped facilities. The salary for this position is highly competitive.

The successful applicant will be expected to participate in the teaching of medical students as well as graduate students and establish a vigorous research program.

Applicants should send curriculum vitae, description of research interests, and the names of three references to: Dr. Ray K. Brown, Chairman, Department of Biochemistry, Wayne State University, School of Medicine, 540 East Canfield Avenue, Detroit, Mich. 48201.

POSITIONS OPEN

DEVELOPMENTAL BIOLOGISTS. Department of Biology seeks two tenure-track assistant professors in developmental biology. Successful candidates are to establish and maintain vigorous, externally funded research programs and participate in an expanding program of cell and molecular biology. Teaching responsibilities are in graduate and undergraduate courses. Send curriculum vitae and letters of recommendation by 15 December 1981 to: Dr. Wallace D. Dawson, Developmental Search, Department of Biology, University of South Carolina, Columbia, S.C. 29208. *An Equal Opportunity/Affirmative Action Employer.*

DIRECTOR OF RESEARCH (Physician/Scientist), CUYAHOGA COUNTY HOSPITAL (a teaching hospital of Case Western Reserve Schools of Medicine & Dentistry). New position in our teaching facility is responsible for the coordination of research programs of the Cuyahoga County Hospital system. Reporting directly to the president of the County Hospital system, duties will include: coordinating and developing research projects at departmental and divisional levels; enacting policies adopted by the Board of Governors for the Center for Research of the County Hospital system; developing long-range planning of research facilities; staffing meetings and functions of the Board of Governors of the Center for Research, and participating in recruitment and evaluations of scientific staff. Active research and teaching opportunities in the area of personal interest and experience are encouraged. Patient care responsibilities are not required of the director. Joint appointment with the Cuyahoga County Hospital and with Case Western Reserve University, School of Medicine, at an appropriate academic rank will be awarded. Candidates must have a proven record of experience in directing a research program. Interested candidates may forward curriculum vitae to: Vincent R. Kaval, Vice President, Planning and Development, Cuyahoga County Hospital, 3395 Scranton Road, Cleveland, Ohio 44109. *An Equal Opportunity Employer.*

DIRECTOR—BELLAIRS RESEARCH INSTITUTE OF MCGILL UNIVERSITY

Applications are invited for the position of resident director of the Bellairs Research Institute of McGill University in Barbados, West Indies.

Applicants should have a Ph.D. and an established interest in tropical research. This is a non-tenure-track appointment, initially for 3 years from 1 May 1982, with salary to be negotiated. The Institute serves as a year-round research station in a broad range of disciplines for the academic staff and students of McGill, the University of the West Indies, and other universities. Facilities include a seawater system, boats, and general laboratory and field equipment. The director is responsible for the management of the institute and for supervision and support of station research and teaching projects.

Send applications and curriculum vitae and arrange to have three letters of reference forwarded to: Professor John B. Lewis, Director, Redpath Museum, McGill University, 859 Sherbrooke Street West, Montreal, Quebec, Canada H3A 2K6.

POSITION ANNOUNCEMENTS

University of South Florida THREE NEW FACULTY POSITIONS IN THE DEPARTMENT OF MARINE SCIENCE

The Department of Marine Science at the University of South Florida, St. Petersburg, announces the establishment of three new faculty positions beginning in September 1982. Applications from persons in the following specialties are especially encouraged:

Microbial ecology, marine ichthyology, carbonate petrology/stable isotope paleoclimatology, and physical oceanography.

Rank and salary will depend upon professional experience and accomplishment. The minimum stipend for professor is \$30,000; associate professor, \$22,000; and assistant professor, \$20,000. The 9-month positions are fully state-supported and tenure-earning. Duties will involve approximately 75 percent research and 25 percent teaching. Applicants must have the Ph.D. in fields appropriate to their specialties and promising records of research accomplishment. The closing date for the receipt of applications is 31 January 1982.

Applicants should send résumés with three references to: Chairman, Department of Marine Science, University of South Florida, 140 Seventh Avenue South, St. Petersburg, Fla. 33701. *The University is an Affirmative Action/Equal Opportunity Institution.*

POSITIONS OPEN

DIRECTOR, DIVISION OF ALLIED HEALTH AND LIFE SCIENCES (AHLIS), THE UNIVERSITY OF TEXAS AT SAN ANTONIO. The University of Texas at San Antonio invites applications and nominations for the position of director, Division of Allied Health and Life Sciences, College of Sciences and Mathematics. Both undergraduate and master's degree programs are offered in the biological sciences. Joint programs in medical technology, occupational therapy, and physical therapy are offered in connection with the University of Texas Health Science Center at San Antonio. The University of Texas at San Antonio opened its doors to undergraduates in 1975 and in fall 1981 has an enrollment of approximately 10,600 students. Candidates should possess the following qualifications:

- 1) An earned doctorate in one of the disciplines in the life sciences,
 - 2) Successful teaching experience,
 - 3) Demonstrated research capabilities,
 - 4) Demonstrated potential for academic administrative responsibility, and
 - 5) Qualify for senior level academic appointment.
- Position available 1 June 1982. Salary commensurate with background experience. Nominations and/or applications should be received by 14 December 1981. Send applications or nominations, including curriculum vitae and the names of at least three references, to:

Chairperson, Search Committee for Director, AHLIS
c/o Office of the Dean
College of Sciences and Mathematics
The University of Texas at San Antonio
San Antonio, Texas 78285

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

FACULTY POSITION DEPARTMENT OF ZOOLOGY UNIVERSITY OF HAWAII AT MANOA

The Department of Zoology, University of Hawaii at Manoa, invites applications for a tenure-track position for an ornithologist, preferably with special research interests in speciation and terrestrial biology. Teaching duties will include avian biology and comparative vertebrate anatomy and will begin in August 1982. Appointment will be made at the assistant professor level. Applicants should send a letter expressing philosophy of teaching and detailing the kind of research he/she would pursue at the University of Hawaii, curriculum vitae, copies of recent publications and funded grant proposals, and names of three references to: Chairman, Department of Zoology, 2538 The Mall, University of Hawaii at Manoa, Honolulu, Hawaii 96822. Applications must be received by 15 January 1982. *The University of Hawaii is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION. Position available September 1982 to teach comparative anatomy, physiology, general biology, and zoology at the undergraduate level. Ph.D. required. Applicants must be broadly trained in biology and must have strong commitment to teaching and research. Study and/or teaching experience at a liberal arts college preferred. Agnes Scott College is a 4-year liberal arts college for women in the Atlanta area. Send application, curriculum vitae, transcripts, and three letters of recommendation to: Dr. Sandra T. Bowden, Chairman, Department of Biology, Agnes Scott College, Decatur, Georgia 30030. Applications should be received by 21 December 1981.

FACULTY POSITIONS IN PHARMACOLOGY

The Department of Pharmacology of The University of Texas Health Science Center at Dallas seeks applications for tenure-track positions at the level of assistant professor. Applicants must have a relevant Ph.D. or M.D. degree, postdoctoral training, and show evidence of firm commitment to a career in independent research. We are particularly interested in considering individuals with an appropriate background who wish to apply techniques of molecular or cellular biology or biochemistry to fundamental problems of pharmacological interest. Responsibilities will also include teaching of medical and/or graduate students after the first year of employment. The department is expanding its faculty, is well-equipped, and is prepared to offer an excellent environment for research as well as competitive salaries, space, and start-up funds. Send curriculum vitae, a brief description of proposed research, and three letters of reference to: Dr. Alfred G. Gilman, Chairman, Department of Pharmacology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. *An Equal Opportunity/Affirmative Action Employer.*

**FIELD DIRECTOR
POSTHARVEST INSTITUTE FOR
PERISHABLES**

For Agency for International Development project under existing, long-term contract with the University of Idaho in the international Postharvest Institute for Perishables. Will report to director and assist in planning, coordination, implementation, and evaluation of international postharvest loss-prevention programs for perishable crops in developing countries. Direct management of some phases of the programs required. Responsible for preparation of manuals and technical seminars, after consultation with specialists, for use in developing countries to reduce postharvest losses. Domestic and international travel required.

Qualifications: University degree (B.S. or higher) in following or related fields: food science, agriculture, horticulture, plant pathology, entomology, or agricultural economics. Proven ability to prepare bulletins or manuals for technical, training, or extension use. Prefer 5 years or more of experience working in a developing country. Also prefer individual with private voluntary organization or Peace Corps experience. Agency for International Development experience highly desirable. Requires working knowledge of Spanish and/or French; prefer FSI-3 rating or equivalent in either language. Knowledge of computer applications, storage, and retrieval systems helpful.

Salary and rank commensurate with training and experience. Idaho State retirement, life and health insurance plans, annual and sick leave.

Position available immediately. Application deadline: 1 January 1982, or until suitable candidate is found. Send résumé and have at least three letters of reference sent to:

Dr. Robert L. Skiles, Director
Postharvest Institute for Perishables
216 Morrill Hall
University of Idaho
Moscow, Idaho 83843
Telephone: 208-885-6791

An Affirmative Action/Equal Opportunity Employer

Microbiology Research Professionals

The strength behind our success is you

At Ralston Purina Company we believe that people are the ultimate source of renewal. Our success is due largely to those who contribute new ideas, imagination and dedication to our common effort. If you are ready for creative challenges in a progressive environment, we want you.

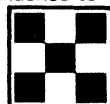
Currently, the Corporate Research and Development Division of our St. Louis World Headquarters has several openings for research professionals who have specialized experience and expertise:

MICROBIOLOGIST - FERMENTATION The successful candidate will have hands-on knowledge of fermentation equipment and microbial enzyme screening, as well as experience in biocatalysis or bioconversions of waste streams. A B.S. or M.S. in Microbiology with emphasis in Biochemistry, Genetics, Cell Culture, or Food Science and two years research experience are desirable.

MICROBIOLOGIST - BACTERIAL PHYSIOLOGY Position requires an interest in intestinal microflorae of domestic animals. A bachelors degree in Microbiology with one to two years anaerobic/intestinal work experience desired.

MICROBIOLOGIST - FUNGAL PHYSIOLOGY A B.S. or M.S. in General Microbiology, Food Microbiology or Food Science with emphasis in Microbiology and experience in Mycology are desired.

We offer an excellent compensation and benefits package and all the advancement opportunities your career merits. If you desire a challenging and fulfilling assignment, please send your curriculum vita, complete with transcripts and salary history, in confidence to:



Barbara Kinney Murphy
Corporate Employment Services
Ralston Purina Company
Department S-5-B
Checkerboard Square
St. Louis, MO 63188
An Equal Opportunity Employer

Research Investigator Genetic Toxicologist

G. D. Searle & Co., a research-oriented worldwide manufacturer and supplier of pharmaceuticals and health care products, has a position available for a Ph.D. with research experience in mammalian cytogenetics, and post-doctoral background in genetic toxicology. (Emphasis on mammalian cell systems.)

This position requires the ability to perform independent research—developing or modifying existing mutagenicity assays as needed in the Genetic Toxicology Lab of our Product Safety Assessment Department. We offer a stimulating and rewarding environment with growth and challenge, excellent salary and benefits, relocation assistance and much more. Please submit resume or curriculum vitae including salary requirements to:

Barbara Gardner
#81192-057

Research & Development Division
G. D. Searle & Co.
P.O. Box 5110
Chicago, IL 60680

*Equal Opportunity M/F/H . . .
A Practice, Not Just A Policy*



SK&F
a SmithKline company

GASTROINTESTINAL RESEARCH PHARMACOLOGISTS IMMUNOLOGISTS

SmithKline, a leader in pharmaceutical research, invites applications from scientists to join an interdisciplinary research program investigating new approaches to the therapeutic control of gut motility and inflammatory bowel disease.

We are seeking talented research scientists with three or more years post-doctoral experience with expertise in one or more of the following:

- autonomic pharmacology of smooth muscle cells
- monitoring of gut myoelectric activity and/or motor patterns
- isolation and cultivation of gut epithelial cells and smooth muscle cells
- isolation of membrane receptors
- membrane transport mechanisms
- isolation of gut-associated lymphoid cells and macrophages
- experimental models of inflammatory bowel disease

These positions offer opportunities for innovative research and productive interaction with other pharmacologists and immunologists within the research division.

We offer excellent salary and benefits and an attractive relocation policy. For confidential consideration, send your C.V. and names of three references citing reference number MB-9 to: Mr. Walter B. Flagg, **SMITHKLINE CORPORATION**, P.O. Box 7929, 1562 Spring Garden Street, Philadelphia, PA 19101

We are an equal opportunity employer, M/F/H/V

POSITIONS OPEN

ENTOMOLOGIST—LIVESTOCK AND POULTRY

The Department of Entomology, University of California at Riverside, has an opening for a tenure-track faculty position as assistant professor of entomology and assistant entomologist in the Experiment Station, effective 1 July 1982. Academic requirements are: Ph.D. degree in entomology or related discipline with training and interest in veterinary entomology. Major responsibilities will be to develop and implement research on arthropods affecting livestock, poultry, and other food animals. The basic and applied research areas will concern arthropods as causal agents of disease; vectors of disease agents; or pests and parasites of livestock and poultry. Special emphasis to be placed on establishing a comprehensive field research program providing solutions to many IPM problems of food animals in California and particularly to the major livestock and poultry industry in southern California. Teaching responsibilities will include leadership or participation in the instruction of courses and seminars in medical and veterinary entomology and training and supervision of graduate students in veterinary entomology. Send detailed curriculum vitae, a brief statement of research interests, copies of reprints and manuscripts, dissertation summary, and the names of four references to: **Dr. Vernon M. Stern, Chairman, Search Committee, Department of Entomology, University of California, Riverside, California 92521.** Closing date for applications is 15 January 1982 or later if a suitable candidate is not identified. *An Equal Opportunity/Affirmative Action Employer.*

EUKARYOTIC GENETICIST

The Department of Biological Sciences, Purdue University, invites applications for a faculty position that would be either tenured or on a tenure-track. Applicants should have research experience and teaching interests generally in the field of eukaryotic genetics. Send curriculum vitae, including a brief description of research experience and plans, and the names of three references by 15 December 1981 to: **Genetics Search Committee, Department of Biological Sciences, Purdue University, West Lafayette, Ind. 47907.** *Purdue University is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN INDUSTRIAL HYGIENE/AIR POLLUTION

Applications are invited for a tenure-track position at the assistant professor level. Available fall 1982. A Ph.D. is required. The successful candidate will be expected to develop a research program with grant support and to teach at both the graduate and undergraduate levels. Send résumé, three letters of recommendation, and summary of research plans by 1 January 1982 to: **Dr. L. Harold Stevenson, Department of Environment Sciences and Microbiology, McNeese State University, Lake Charles, La. 70609.** *McNeese is an Equal Opportunity/Affirmative Action Employer.*

WANTED—FIELD DIRECTOR for the University of Maryland Medical Research Unit located in Lahore, Pakistan. Will be responsible for the direction of an aggressive expanding medical research and training program, a component of the International Health Program administered by the Department of Microbiology of the University of Maryland School of Medicine. Program areas include ecology, virology, entomology, genetics, parasitology (with particular interest in malaria), bacteriology, epidemiology, and immunology. Experience in the management of research programs required. Salary is negotiable. Starting date: January 1982. Initial appointment will be for 2 years. Please send letter of interest, curriculum vitae, and names of references to: **John M. Dennis, M.D., Dean, University of Maryland School of Medicine, Howard Hall Addition, 655 West Baltimore Street, Baltimore, Md. 21201.** *An Equal Opportunity Employer.*

IMMUNOCHEMIST/ COMPLEMENTOLOGIST, Ph.D. OR M.D.

Tenure-track position in tumor immunology at Baylor College of Medicine. Send curriculum vitae and bibliography to:

Box 266, SCIENCE

Baylor is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

FACULTY POSITIONS. Duke University School of Forestry and Environmental Studies is expanding its programs in natural resources science/ecology, systems science, and economics/policy. Applications are invited for faculty positions in four areas: **forest ecology, environmental toxicology, watershed hydrology, and forest and natural resources management systems.** Emphasis in all areas is on quantitative methods. Both tenure-track and research appointments of up to 3 years will be made. Applicants must hold a doctoral degree with at least one degree in a natural resource area. Write for position announcement or submit curriculum vitae, representative publications, and three references by 15 December to: **Chairman, Faculty Council, School of Forestry and Environmental Studies, Box SA, Duke University, Durham, N.C. 27706.** Recent Ph.D.'s submit transcripts. *Duke University is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS in organic chemistry and inorganic chemistry. Applications or nominations are invited for openings in the Department of Chemistry at Massachusetts Institute of Technology (MIT). Applicants should have demonstrated ability to do exceptional independent research in chemistry. Appointment will probably be at the assistant professor level, but applications and nominations for other levels will be considered. Candidates should submit curriculum vitae, a publications list, and a description of research interests, and have three letters of recommendation sent not later than 15 February 1982 to: **Professor J. L. Kinsey, Room 18-399, MIT, Cambridge, Mass. 02139.** *MIT is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN BIOLOGICAL SCIENCES at the Hopkins Marine Station of Stanford University

Applications are invited for an appointment in the Department of Biological Sciences of Stanford University, to be resident at the Hopkins Marine Station in Pacific Grove, California. The position is without restriction as to rank although preference will be given to candidates at the assistant professor level. The position involves both teaching and research. The Station wishes to appoint someone with substantial competence in marine zoology or marine phycology, but whose research interests relate to ecological or comparative physiological problems. All applications must include curriculum vitae, a statement of research interests, and a list of three people from whom letters of reference will be sought. Applications should reach: **C. S. Pittendrigh, Hopkins Marine Station, Pacific Grove, Calif. 93950,** by 15 December 1981. *Stanford University is an Equal Opportunity Employer.*

HEAD, DEPARTMENT OF BIOCHEMISTRY, Clemson University, effective as early as 1 July 1982. The applicant should have a Ph.D. or equivalent terminal degree with acknowledged experience and competence in biochemistry. The individual should meet the qualifications for full professor in the Department of Biochemistry at Clemson University. Candidates must have strong commitment to research and to both graduate and undergraduate education. Candidates should have experience in administering funded projects and/or academic units. Clemson University is the Land Grant University for the state of South Carolina. The Department of Biochemistry is a unit of the College of Sciences and offers B.S., M.S., and Ph.D. degrees in biochemistry. Interested candidates should submit a letter of application and curriculum vitae, and have three letters of recommendation sent by 15 January 1982 to: **Dr. Richard H. Hilderman, Chairman, Biochemistry Search Committee, 132 Long Hall, Clemson University, Clemson, S.C. 29631.** *The University encourages applications from minorities and females. Clemson University is an Equal Opportunity/Affirmative Action Employer.*

BERKELEY PHYSICS

Pending budgetary approval, the Department of Physics of the University of California, Berkeley, expects during the next 2 years to make one or two tenure appointments. Preferred areas of research are theoretical particle physics, experimental condensed matter physics, statistical physics, and astrophysics.

Applicants should write, as soon as possible, and definitely before 15 December 1981 to: **Chairman, Department of Physics, University of California, Berkeley, California 94720,** giving curriculum vitae, publication list, and references. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

IMMUNOLOGIST. Applications are invited from individuals interested in a position as assistant or associate professor at Ohio University in the College of Osteopathic Medicine and the Department of Zoology and Microbiology. This teaching-research position involves the instruction of osteopathic medical students in medical immunology and immunology courses at the graduate level. The successful candidate will be expected to develop a strong independent research program including direction of graduate students for the M.S. and Ph.D. Research area is open, but preference will be given to candidates specializing in cellular immunology. Minimum qualifications include a Ph.D. degree or equivalent and postdoctoral experience. Prior medical or dental school teaching is highly desirable. Earliest starting date: 1 July 1982.

Interested individuals should submit curriculum vitae, references from three individuals, and a summary of research plans by 31 January 1982 to: **Dr. Malcolm Modrzakowski, Chairperson, Ohio University, College of Osteopathic Medicine, Irvine Hall, Athens, Ohio 45701.** *Ohio University is an Affirmative Action/Equal Opportunity Employer.*

NEUROSCIENTIST, ASSISTANT OR ASSOCIATE PROFESSOR. Applications are invited for a tenure-track position involving participation in the neuroanatomy and/or histology courses for osteopathic medical students, and in the graduate curriculum of the Department of Zoology and Microbiology. A strong research orientation is required. Start-up funds are available. The research area is open, but an interest that would complement one of the existing strong areas of research (developmental neurobiology, neuromuscular biology, functional morphology) would be desirable. A Ph.D. degree or equivalent is required; prior medical or dental school teaching experience is highly desirable. Salary is competitive; campus location is attractive. Earliest starting date is 1 July 1982.

Send curriculum vitae, including a statement of teaching and research interests, before 1 January 1982 to: **Dr. Louise L. Edds, Chairperson, Neuroscientist Search Committee, Ohio University, College of Osteopathic Medicine, Irvine Hall, Athens, Ohio 45701.** *Ohio University is an Affirmative Action/Equal Opportunity Employer.*

NUCLEAR ENGINEER. Louisiana State University (LSU) has a tenure-track faculty position for an assistant professor in the general area of nuclear engineering and applications of nuclear science. Ph.D. required and industrial and teaching experience desirable. *LSU is an Equal Opportunity/Affirmative Action Employer.* Reply with résumé to: **Dr. E. N. Lambremont, Director, Nuclear Science Center, Louisiana State University, Baton Rouge, La. 70803-5820.**

PHYSIOLOGIST. Tenure-track, 9-month position as assistant professor to teach mammalian physiology. An active research program is essential; a grant record, or promise of one, desirable. The area of research is open. Send curriculum vitae, research interests, and names of three potential referees to: **Dr. Donald Miller, Department of Physiology, Southern Illinois University, Carbondale, Illinois 62901.** Telephone: 618-536-2052. Application deadline: 20 November 1981. Appointment starting date: January 1982. *An Equal Opportunity/Affirmative Action Employer.*

PLANT ECOLOGIST INVERTEBRATE ECOLOGIST

The Archbold Biological Station of Archbold Expeditions, Inc., invites applications for two positions in the fields of plant ecology and terrestrial invertebrate ecology. The primary responsibility of the appointees will be to develop a strong research program in their respective fields of interest focusing on the environment of the 3900-acre Station property. Additional responsibilities will include directing research of undergraduate and graduate students, curating reference collections, and aiding in the management of the Station's natural areas.

The closing date for applications is 1 February 1982. The preferred starting date is 1 July 1982, although alternative dates are possible. Candidates must possess a Ph.D. at the time of appointment. Applicants should submit a statement of research interests and goals, complete curriculum vitae, list of publications, and three letters of recommendation to: **Dr. James N. Layne, Executive Director, Archbold Biological Station, Route 2, Box 180, Lake Placid, Fla. 33852.**

Equal Opportunity/Affirmative Action Employer

**UNIVERSITY OF TORONTO
DEPARTMENT OF MEDICAL GENETICS
ASSISTANT OR ASSOCIATE PROFESSORS
POSTDOCTORAL FELLOWS**

The University of Toronto, Department of Medical Genetics, invites applications for two positions open at either the Assistant or Associate Professor level. One position requires a background in animal models of metastasis and quantitative assays of metastatic potential. The other position requires a background in the isolation and structural identification of cell surface glycopeptides and oligosaccharides. The appointees will be expected to conduct independent research programmes in their area of expertise, as applied to the investigation of the molecular basis of metastasis. This research will be conducted within a multidisciplinary group funded for five years by a Terry Fox Special Initiatives Grant from the National Cancer Institute of Canada. Start-up funds will be provided for personnel, equipment and supplies. Opportunities for eventual permanent staff positions are excellent. Candidates must have a Ph.D. or equivalent, and appropriate post-doctoral training. Salary and rank will be commensurate with qualifications and experience.

Three positions within the above research group are open for post-doctoral fellows with backgrounds in either of the two previously mentioned areas, or in somatic cell genetics. Salary support for three years is available for each of these positions.

Closing date for all applications is December 31, 1981. Positions will take effect April 1, 1982 or as soon as possible thereafter. Applicants are asked to submit a curriculum vitae with a list of publications, and the names of three referees to either: **Dr. Harry Schachter, Department of Biochemistry, Research Institute, Hospital for Sick Children, Toronto, Ontario, M5G 1X8; OR: Dr. Jeremy Carver, Department of Medical Genetics, Medical Sciences Building, University of Toronto, Toronto, Ontario, M5S 1A8.**

**CSIRO
SENIOR PHYSICAL OCEANOGRAPHER
A\$24,951 to A\$33,616 per annum
CSIRO MARINE LABORATORIES
DIVISION OF OCEANOGRAPHY
SYDNEY, N.S.W., AUSTRALIA**

GENERAL: CSIRO has a broad charter for research into primary and secondary industry areas. The Organization has approximately 7400 employees, 2700 of whom are research and professional scientists, located in divisions and sections throughout Australia. In March 1981, the CSIRO Division of Fisheries and Oceanography was formally separated into a Division of Fisheries Research and a Division of Oceanography. These divisions collectively form the CSIRO Marine Laboratories, and are Australia's principal marine laboratories, employing about 200 scientists and support staff. The main laboratory is in Sydney and there are smaller laboratories in Brisbane and Perth.

Depending on Parliamentary approval, the Sydney activities will be transferred to new laboratories to be constructed on a deep waterfront site in Hobart, Tasmania. The appointee must be prepared to transfer to Hobart at any time after December 1982. The Australian Government has also agreed to the acquisition by CSIRO of a modern oceanographic ship to replace the presently chartered *Sprightly*.

The interests of the division in physical oceanography include continental shelf dynamics, mixed layer and upwelling dynamics, air-sea interaction, ocean circulation and boundary currents, the interpretation and application of satellite data, numerical modelling, and geophysical fluid dynamics.

DUTIES: The appointee will take a leading role in the initiation and conduct of research within these fields and in relation to existing or future programs. On occasions, the appointee may be expected to participate in or to lead research vessel cruises.

QUALIFICATIONS: A Ph.D. or equivalent qualification in physical oceanography, geophysical fluid dynamics, or some other relevant discipline, and several years of experience and substantial research achievement.

TENURE: Indefinite with superannuation.

APPLICATIONS: In writing, quoting reference number A2425 and giving full personal particulars, including details of qualifications and experience, copy of academic transcript, and the names of at least two professional referees, should reach:

The Chief
Division of Oceanography
CSIRO
P.O. Box 21
Cronulla, N.S.W. 2230, Australia

by 27 November 1981.

**CNS
PHARMACOLOGIST**

We have an excellent opportunity for a pharmacologist with a minimum of 2 years experience beyond the PhD level. Specific experience should include the application/development of isolated tissue methodology in the characterization of opiates and their receptors.

The successful candidate should have the ability to critically appraise research efforts at the IN VITRO level and develop/apply appropriate IN VIVO models.

Appropriate facilities and technical staff to participate in drug development will be provided.

Located near Albany, New York we offer an excellent salary, benefits and the opportunity for career growth within a dynamic, professional environment.

Please send curriculum vitae including salary requirements in confidence to:

John Barry
Employment Administrator

**STERLING-WINTHROP
RESEARCH INSTITUTE**

Division of Sterling Drug Inc.
Columbia Turnpike
Rensselaer, New York 12144

Equal Opportunity Employer M/F



**SK&F
a SmithKline company
DIRECTOR OF
IMMUNOLOGY**

SmithKline, a leader in pharmaceutical research, invites applications from senior scientists to serve as Director of a newly formed Immunology department investigating immunoregulatory networks. The post offers excellent opportunities for establishing an innovative research program and for recruitment of additional talented scientists.

New, fully equipped research facilities are available in a new research center under construction at Upper Merion in suburban Philadelphia and will be occupied in 1982.

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

The successful candidate is expected to have:

- a doctoral degree (Ph.D.; M.D.; D.V.M.) and ten years post-doctoral experience in immunology
- a demonstrated record of excellence in research in either academia or industry
- a significant bibliography of publications in prestigious journals
- proven administrative and communication skills
- demonstrated supervisory abilities and capacity to motivate a multi-disciplinary research team

The position offers significant opportunity to participate in the development of new research directions within the research division.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your C.V. and names of three references citing reference number MB-1A1 to: Mr. William G. Groves, **SMITHKLINE CORPORATION**, P.O. Box 7929, 1500 Spring Garden Street, Philadelphia, PA 19101.

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NRC RESEARCH ASSOCIATESHIP AWARDS

Competitive awards to recent doctoral graduates and experienced senior investigators—free of interruptions and distractions of other duties—as visiting scientists in selected federal laboratories throughout the United States. Over 200 new awards offered by the National Research Council. Opportunity for specialized experience in experimental or theoretical research in fields of:

**ATMOSPHERIC & EARTH SCIENCES
ENGINEERING • LIFE SCIENCES
PHYSICS • CHEMISTRY
ENVIRONMENTAL SCIENCES
MATHEMATICS • SPACE SCIENCES**

Most of the 18 programs are open to non-U.S. nationals, and most are open to senior investigators as well as recent PhDs.

Application materials with details on research opportunities and laboratory locations are available from:

Associateship Office (JH 610-S3)
NATIONAL RESEARCH COUNCIL
2101 Constitution Avenue, N.W.
Washington, D.C. 20418
Postmark deadline for applications:
January 15.

National Research Council
National Academy of Sciences
National Academy of Engineering Institute of Medicine

NRC RESIDENT RESEARCH ASSOCIATESHIPS

The Laboratory for Cosmic Ray Physics at the Naval Research Laboratory, Washington, D.C. is seeking a resident associate to participate in our program of cosmic ray astrophysics research. Our laboratory offers opportunities for theoretical research on cosmic ray propagation and experimental research on cosmic ray composition, the anomalous component, magnetospheric physics and neutron astronomy.

This program is open to U.S. citizens who have received their Ph.D. within the past five years. Salary to be commensurate with GS-11 rate (approximately \$23,000 per year). For further details on the research opportunities contact Dr. James H. Adams, Jr., (202) 767-2724. For application materials and program details contact:

Associateship Office (610-NC-5)
National Research Council
2110 Constitution Avenue, N.W.
Washington, D.C. 20375
An Equal Opportunity Employer

POSITIONS OPEN

ORNITHOLOGIST

The University of Miami invites applications for the position of **ASSOCIATE PROFESSOR OR PROFESSOR** available fall 1982 in the Department of Biology. The successful candidate will fill an **ENDOWED CHAIR** in ornithology when the current occupant retires. We seek a person of outstanding scientific achievement who will continue an active research program, direct students, and curate a systematic collection. Competitive salary commensurate with qualifications and experience. Application period open until the position is filled. Send curriculum vitae, synopsis of research, representative reprints, and names of four references to: **Ornithologist Search Committee, Department of Biology, P.O. Box 249118, Coral Gables, Fla. 33124.**

An Affirmative Action/Equal Opportunity Employer

PHYSIOLOGISTS. Cardiovascular, respiratory, central and autonomic nervous system, and cellular physiologists are urgently needed. This latter with wide experience in cell culture of transformed cells. Teaching and research expertise emphasized. Please apply to: **Chairman, Physiology Department, Ponce School of Medicine, P.O. Box 7004, Ponce, P.R. 00732.**

PLANT PHYSIOLOGIST (VITICULTURIST)/ ASSISTANT PROFESSOR OF VITICULTURE

University of California, Davis. A tenure-track, joint teaching (25 percent) and research (75 percent) position to develop and conduct a research program in the areas of importance to the viticulture industry, especially raisins and table grapes, in California's San Joaquin Valley. The program would deal with problems such as water relations, canopy management, nutrition, root physiology, mechanical pruning and harvesting, and photosynthesis. Position will be located at the University's Kearney Field Station near Fresno. The person selected will teach a course at Davis for one quarter each year. Requires a Ph.D. with training in plant physiology, physiological ecology, viticulture, horticulture, or related fields. Experience with grapevines or other perennial horticultural crops is desired but not essential. Curriculum vitae, statement of research and teaching interests (and background in each), official undergraduate and graduate transcripts (if within 5 years of graduation date), lists and reprints of published works and submitted manuscripts, and names and addresses of at least three references should be sent to: **Professor W. M. Kliever, Department of Viticulture and Enology, University of California, Davis, California 95616**, prior to 1 February 1982. *In compliance with federal and state laws and University policy, the University of California does not discriminate on the basis of race, color, national origin, religion, sex, handicap, age, or against disabled veterans or veterans of the Vietnam era. The University of California is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE POSITION, MOLECULAR BIOLOGY—Research involves working with mammalian cell genetics, in vitro chemical carcinogenesis, genetic transformation, and DNA cloning and sequencing. Relevant experience in tissue culture and malignant transformation techniques essential. Experience in recombinant DNA techniques essential. Superbly equipped, stimulating and rapidly growing department located 10 miles from downtown Manhattan and minutes from pleasant suburbs. Please send résumé to: **Dr. G. di Mayorca, Professor and Chairperson, Department of Microbiology, College of Medicine and Dentistry of New Jersey—New Jersey Medical School, 100 Bergen Street, Newark, New Jersey 07103.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION

POSTGRADUATE RESEARCH BIOLOGIST (salary range: \$15,936 to \$19,848 per year) position is available immediately for a recent Ph.D. with interest in somatic cell genetics. Candidates with training in recombinant DNA technology preferred. Ongoing projects are: (i) a TS Chinese hamster fibroblast affected in mRNA metabolism; (ii) cloning of a gene for succinate dehydrogenase and study of the cytoplasmic precursor and its transport to the inner mitochondrial membrane; and (iii) the regulation of ornithine decarboxylase and other cell cycle related enzymes. Send curriculum vitae and three letters of reference by 20 November to: **Dr. I. E. Scheffler, Department of Biology B 022, University of California, San Diego, La Jolla, Calif. 92093.**

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

POSITIONS OPEN

SIMON FRASER UNIVERSITY BURNABY, BRITISH COLUMBIA, CANADA DEPARTMENT OF BIOLOGICAL SCIENCES POPULATION DYNAMICS

Applications are invited for a tenure-track position as assistant professor in population biology, with research interests in the dynamics of interspecific interactions (for example, predator-prey, parasite-host, pathogen-host). The successful applicant will be expected to develop a strong research programme and to teach at both the undergraduate and graduate level, including courses in the department's master of pest management programme. Candidates must have a Ph.D. degree, with experience in entomology and/or pest management. Preference will be given to candidates eligible for employment in Canada at the time of application.

The position is available from 1 September 1982. The current salary base for the assistant professor rank is \$25,000 per year, subject to ratification.

Applications should include curriculum vitae, a brief statement of research interests and objectives, and reprints of published research. Applicants should request a confidential assessment of their research and teaching ability from three referees, to be forwarded directly to:

Dr. K. K. Nair, Chairman
Department of Biological Sciences
Simon Fraser University

Burnaby, British Columbia, Canada V5A 1S6

Deadline for receipt of applications is 31 December 1981, or until the position is filled.

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE required to work on myocardial ischemia using perfused rat heart and myocytes as models. Experimental approaches include studies on pharmacology of flow regulation and NADH fluorescence photography to study patterns of heterogeneous oxygenation. Send curriculum vitae and two letters of recommendation to: **Dr. John R. Williamson, University of Pennsylvania, Department of Biochemistry and Biophysics G4, Philadelphia, Pa. 19104.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOW IN IMMUNOLOGY/BIOCHEMISTRY to conduct research elucidating several aspects of Kupffer cell function. Experience in culture techniques, radiolabeling, autoradiography, proteolysis, peptide isolation and analysis will be helpful. Salary: \$14,000 plus fringe benefits. Send résumé and two letters of recommendation to: **Dr. Henry Gans, Coordinator for Research and Development, VA Medical Center, 1900 East Main Street, Danville, Illinois 61832.** Telephone: 217-442-8000, extension 303.

An Equal Opportunity Employer

POSTDOCTORAL FELLOW IN IMMUNOLOGY knowledgeable in the methodologies of humoral and cell-mediated immunity to study the effects of gut-derived antigens in human and experimental liver disease. Experience in cell culture and biochemical procedures necessary. Salary: \$14,000 plus fringe benefits. Send résumé and two letters of recommendation to: **Dr. Henry Gans, Coordinator for Research and Development, VA Medical Center, 1900 East Main Street, Danville, Illinois 61832.** Telephone: 217-442-8000, extension 303.

An Equal Opportunity Employer

POSTDOCTORAL POSITION for biochemist with background in enzymology and lipid biochemistry to study the regulatory mechanism of bile acid biosynthesis. The project will focus on the short-term regulation of cholesterol 7 α -hydroxylase. The position is available immediately. Please send curriculum vitae and the names of three references to: **Ajit Sanghvi, Ph.D., Laboratory Director, Clinical Chemistry Laboratory, University Health Center of Pittsburgh, 203 DeSoto Street, Pittsburgh, Pa. 15261.**

POSTDOCTORAL POSITION in cell and molecular biology of cancer. Studies of mechanisms regulating growth and differentiation in normal and malignant human epithelial cells in culture [see *Cell* 22, 629 (1980); *Cell* 25, 627 (1981)]. Recent Ph.D. in cell biology, biochemistry, or molecular genetics with strong background in cell culture, immunochemical, or modern DNA/RNA techniques preferred. Send curriculum vitae, description of research experience and interests, and names of three references to: **Dr. James G. Rheinwald, Harvard Medical School, SIDNEY FARBER CANCER INSTITUTE, 44 Binney Street, Boston, Mass. 02115.** *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR — MICROBIOLOGY—a position is open for an Assistant or Associate Professor with expertise in the broadly defined areas of the genetics and/or biochemistry of prokaryotic or eukaryotic microorganisms. This position, in the Microbiology Department of the Mount Sinai School of Medicine, offers an exceptional opportunity to conduct original research in a modern, spacious, well equipped building, in an environment of active teaching and research. The Mount Sinai School of Medicine, located in Manhattan's desirable upper East Side, is young (14 years old) and growing, and has already developed into one of the nation's outstanding research centers. The Microbiology Department, which currently has major strengths in virology and immunology, seeks to expand and develop its program in microbial genetics and biochemistry, including, for example, basic research in *Escherichia coli*, *Bacillus subtilis*, yeast, fungi, protozoans, helminths, bacteriophage, or pathogenic microorganisms. Those interested should submit curriculum vitae, a list of publications, a summary of current research interests and names of three references who may be contacted to **Dr. James G. Wetmur, Search Committee Chairman, Department of Microbiology, Mount Sinai School of Medicine, 5th Avenue and 100th Street, New York, New York 10029.** The Mount Sinai School of Medicine is an Equal Opportunity/Affirmative Action Employer. Application deadline is December 1, 1981.

RESEARCH SCIENTISTS PLATELET ATHEROSCLEROSIS

Sandoz Inc., a leading manufacturer of chemical and pharmaceutical products is seeking candidates to join a newly formed team of biochemical pharmacologists, arterial wall morphologists and organic chemists.

This highly interactive team will investigate alternatives to serum cholesterol reduction as an approach to drug control of atherosclerosis. Included within these alternatives will be agents which alter platelet function and the affect of platelet factors on proliferation of the artery wall. In designing new directions for atherosclerosis therapy, cell culture, RIA, EM, SEM, biochemical and immunological techniques will be utilized.

Ideal candidates should possess a PhD in biochemistry, pharmacology, or cell biology with at least 2 years of industrial or post doctoral training in a related research program. Experience in cell culture techniques or platelet biochemistry would be an asset.

Located in northern NJ, Sandoz offers a salary commensurate with your experience and attractive work environment with career challenges and opportunities.

Please send detailed resume to:

Mrs. Judith O'Hagan
Personnel Manager

SANDOZ, INC.
RESEARCH and DEVELOPMENT
Route 10, East Hanover,
New Jersey 07936



An Equal Opportunity Employer M/F

BIOGEN S.A. Geneva, Switzerland

Positions are available for scientists at all levels who are skilled in the areas of:

MICROBIAL GENETICS
MICROBIAL PHYSIOLOGY
CELL BIOLOGY
BIOCHEMISTRY
IMMUNOLOGY

FERMENTATION TECHNOLOGY
ENZYMOLGY
PROTEIN CHEMISTRY
NUCLEIC ACID BIOCHEMISTRY
RECOMBINANT DNA TECHNOLOGY

Biogen is a biotechnology company with laboratories in Switzerland and in the United States, developing commercial applications of molecular biology in a variety of areas. We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment. Because of successful developments we will be expanding our staff and facilities during 1982 and are seeking highly qualified researchers as we initiate new projects.

Biogen offers a competitive salary and benefits package.

**REPLY TO: Personnel Manager, Biogen S.A., Route de Troinex 3,
1227 Carouge, Geneva, Switzerland.**

Please send your resume and a list of three individuals who may be contacted for references on your behalf.

All replies will be evaluated in confidence.

Biogen is an equal opportunity employer.

POSITIONS OPEN

POSTDOCTORAL POSITION (research associate) available immediately to study aspects of the regulation of DNA replication in mammalian cells. Background in proteins and nucleic acid biochemistry desirable. Salary: \$15,000 plus fringe benefits. Send curriculum vitae and two letters of reference to: **Dr. E. Rapaport, Department of Microbiology, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118.**

POSTDOCTORAL POSITION—REPRODUCTIVE PHYSIOLOGY

Research on the hormonal regulation of the oocyte-cumulus cell complex, cumulus cell function, and oocyte meiotic maturation. Send letter of application, curriculum vitae, and the names and addresses of three references to: **Dr. John Eppig, The Jackson Laboratory, Bar Harbor, Maine 04609.** U.S. citizens only.

POSTDOCTORAL POSITIONS funded for 2 years are available immediately to study phospholipid metabolism in the cardiovascular system. The research will focus on the isolation, characterization, and regulation of cardiovascular phospholipases A₂. Salary: NIH guidelines. Send résumé and three letters of reference to: **Dr. Richard C. Franson, Department of Biophysics, Box 694, Medical College of Virginia, Richmond, Va. 23298.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS—A limited number are open for training in cell biology, biochemistry, genetics, and virology as related to cancer. These are open to U.S. citizens or holders of permanent U.S. visas. Research conducted at the Sidney Farber Cancer Institute under the guidance of faculty members with appointments at Harvard Medical School. An Equal Opportunity/Affirmative Action Employer. For further information, send a brief résumé and two letters of recommendation to: **Dr. Arthur B. Pardee, SIDNEY FARBER CANCER INSTITUTE, 44 Binney Street, Boston, Mass. 02115.**

POSTDOCTORAL POSITION available immediately to carry out studies of the regulation by hormones and calcium of the expression of the growth hormone and prolactin genes [see *J. Biol. Chem.* **256**, 5942 (1981)]. Background in biochemistry required, and familiarity with techniques of recombinant DNA research desirable. Send curriculum vitae and names and telephone numbers of references to: **Dr. Carter Bancroft, Cellular Gene Expression and Regulation Laboratory, Sloan Kettering Institute for Cancer Research, 1275 York Avenue, New York, N.Y. 10021.**

DEPARTMENT OF BIOPHYSICS AND MEDICAL PHYSICS UNIVERSITY OF CALIFORNIA BERKELEY, CALIF. 94720

POSTDOCTORAL POSITIONS in radiation biophysics to work with faculty at the Berkeley or San Francisco campuses of the University of California in the areas of radiation biology, radiation genetics, and radiation oncology. Appointments are normally made for 1 year, but with the possibility of renewal for an additional year. Applications should include curriculum vitae, a brief statement of research interests and goals, and the names and addresses of three references. Please send to: **Dr. Robert K. Mortimer, Department of Biophysics and Medical Physics, University of California, Berkeley, Calif. 94720.** The University of California is an Equal Opportunity/Affirmative Action Employer.

RESEARCH PROFESSOR—MOLECULAR GENETICS, DEPARTMENT OF MOLECULAR AND POPULATION GENETICS, University of Georgia, Athens, Georgia 30602. The Department of Molecular and Population Genetics at the University of Georgia is seeking an outstanding scientist for appointment as research professor, beginning fall 1982. This is a senior level appointment requiring that the successful candidate have a distinguished record of research accomplishment in some area of molecular genetics. Nominations and applications, the latter to include curriculum vitae, bibliography, and the names of at least four persons who could provide a letter of evaluation, should be sent to: **Dr. Norman H. Giles, Chairman, Search Committee, Department of Molecular and Population Genetics, University of Georgia, Athens, Georgia 30602.** Screening of applicants will begin on 15 December 1981; the closing date for applications will be 31 January 1982. The University of Georgia is an Equal Opportunity/Affirmative Action Institution.

POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATE

Position available immediately for ¹H, ²H, and ¹³C NMR studies of plasma lipoproteins and model systems. Outlines of specific research projects available on request.

Prefer candidates with a background in NMR; a doctorate in biochemistry, chemistry, biophysics, or related area is required. Send curriculum vitae, publication lists, and names of three references to: **Dr. Donald M. Small, Biophysics Institute R111, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118.**

POSTDOCTORAL RESEARCH ASSOCIATE POSITION available immediately with the University of Illinois Alcohol and Drug Abuse Research and Training (ADART) Program. Ph.D. with experience in developmental pharmacology to study effects of prenatal exposure to sedative hypnotics on development of brain receptor systems. Salary: \$17,500. The University of Illinois is an Equal Opportunity/Affirmative Action Employer. Send curriculum vitae and three letters of reference to: **B. Tabakoff, Professor and Director, ADART Program, University of Illinois Medical Center, P.O. Box 6998, Chicago, Ill. 60680.**

POSTDOCTORAL RESEARCH ASSOCIATE

Postdoctoral research associate positions in biomedical engineering available for research on medical instrumentation involving piezoelectric polymers and artificial organs. Background in physics or engineering preferred. Send curriculum vitae and three letters of reference to: **Dr. P. M. Galletti, Artificial Organ Laboratory, Box G, Division of Biology and Medicine, Brown University, Providence, R.I. 02912.** Brown University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE available immediately. To study the biosynthesis and regulation of glutathione during chemical intoxication with isolated hepatocytes and isolated kidney cells. Biliary secretion of S-glutathione conjugates and enterohepatic circulation and related metabolism will also be studied. Closing date: 20 November 1981. Available 1 December 1981. To study: (i) chemical toxicity mechanisms, (ii) protein chemical modifications, and (iii) cellular protective mechanisms against 1,2-dihaloethanes. Closing date: 20 November 1981.

Applications and letters of recommendation to: **Dr. Donald J. Reed, Department of Biochemistry and Biophysics, Oregon State University, Corvallis, Oregon 97331.** Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.

The University of California, Irvine, Department of Surgery, is recruiting for an **IN-LINE PROFESSOR** with a doctorate in biology or biophysics and a background in laser technology. This person must have demonstrated experience with its biologic effects, especially at the cellular and tissue levels. Must have an interest in and experience with laser application to human malignancies and in coordinating a general program in several surgical specialties. The research position also involves teaching undergraduate medical students, residents, and postgraduate students. Send curriculum vitae and references to: **G. Robert Mason, M.D., Professor and Chairman, Department of Surgery, University of California, Irvine, Irvine, California 92717,** by 7 December 1981.

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

RENAL RESEARCH ASSOCIATE, 40 hours per week and overtime when necessary for the job. Salary: \$18,600 per year. Duties: Sophisticated biochemical analysis of hormone-kidney interactions. Employee should be expert in the preparation of fractions of cell membranes of the kidney cells and in the study of their hormonal binding and degradation properties. The employee's qualifications will help in devising and interpreting such experiments from a biomedical standpoint. Minimum requirements: 8 years of college with M.D. and M.Sc. with major field of study in medicine and biochemistry and 1 year of experience as renal research associate. Other requirements: M.D. with biochemical expertise needed for medical aspects of this work. Apply to: **Department of Medicine, Box 83, University of Chicago, 950 East 59 Street, Chicago, Illinois 60637; telephone 312-947-5264.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

PROFESSOR AND CHAIRPERSON DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY THE ALBANY MEDICAL COLLEGE

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

**Dr. Leo E. Reichert, Jr.,
Chairman, Microbiology and Immunology
Search Committee
Department of Biochemistry
Albany Medical College
Albany, New York 12208**

Closing date for applications is 31 December 1981. The Albany Medical College is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF KONSTANZ

At the Faculty of Biology, the position of a
**C-3 Professor
(roughly equivalent to associate professor) of
POPULATION ECOLOGY**

Is opening. One of the following disciplines would be preferred: population dynamics, population genetics, or parasitology. In research, a combination of experimental with theoretical approaches would be desirable. At Konstanz the following ecological disciplines are established at present: plant pathology and limnology (production biology, microbial ecology, and stream ecology).

The teaching obligation will include the fundamentals of general ecology. Applications from non-German-speaking countries are encouraged. Initially, teaching in English will be possible.

Please direct applications, including curriculum vitae, list of publications, description of teaching experience, and outline of future research plans to: **Fakultät für Biologie der Universität Konstanz, Postfach 5560, D-7750 Konstanz, West Germany.**

Deadline of applications: 30 November 1981.

RESEARCH ASSOCIATE POSITION

Long-term, full-time research position immediately available in the Laboratory of Developmental Neurobiology. Candidate should be experienced with modern axoplasmic tracer techniques, have an interest in neuroembryological research, and should possess leadership qualities. Salary open and dependent on qualifications. Send curriculum vitae and letters of reference to: **Dr. Joseph Altman, Department of Biological Sciences, Purdue University, West Lafayette, Ind. 47907.**

An Equal Opportunity/Affirmative Action Employer

RESEARCH ASSOCIATE DEPARTMENT OF CHEMISTRY THE OHIO STATE UNIVERSITY

Applications are invited from individuals with an M.S. in organic chemistry and several years of research experience for a research position in the Department of Chemistry at the Ohio State University. Applicants, who must have training in macro- and micro-scale synthesis, NMR, mass, and PE spectroscopy, including operation of Fourier transform spectrometers, kinetics, cycloaddition processes, and in analyzing results and preparing reports, should write to: **Ohio Bureau of Employment Services, 309 South Fourth, Columbus, Ohio 43215.** Salary: \$13,800 to \$15,240 per annum. An Equal Opportunity/Affirmative Action Employer.

GENETIC ENGINEERING

Senior Scientists, Staff Scientists
Research Associates, Senior Technicians,
Technicians

Young, rapidly growing biotechnology company in Framingham, Massachusetts (Boston area) is seeking highly qualified candidates to lead and work on projects involving the application of recombinant DNA technology to medical, agricultural, and chemical fields.

Senior and Staff Scientists should have a doctorate and at least two years of research experience with recombinant DNA techniques. Other applicants should have appropriate credentials. We offer an attractive working environment close to the major academic centers in Boston-Cambridge, competitive salary and benefits, and stock ownership. If you are interested in becoming a partner in a rapidly, expanding company, send a resume and references to:

Director of Project Development
Integrated Genetics, Inc.
51 New York Avenue
Framingham, MA 01701

Senior Research Chemist Immunoassay R&D

Our increased commitment to Research and Development of immunoassay products has resulted in a new R&D unit at the Immunodiagnostics Division of Becton Dickinson . . . a billion-dollar, multinational health care leader. In turn, this has created an outstanding opportunity for a Senior Research Chemist experienced in developing non-isotopic immunoassays.

This senior level position requires you to have a PhD in Immunochemistry (or related field). Experience in developing fluorescence immunoassays is highly desirable. Ideally, you have undertaken post graduate work, and have 2-3 years industrial experience.

The competitive salary we offer is complemented by an excellent benefits package, including savings plan. Please forward resume, including salary history in confidence to: Ms. M. McGrane, Manager, Human Resources, Becton Dickinson Immunodiagnostics Division, Mountain View Avenue, Orangeburg, New York 10962. An equal opportunity/affirmative action employer.

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IMMUNOLOGISTS

SmithKline, a leader in pharmaceutical research, invites applicants to join a new research group of 35-40 individuals studying immunoregulation. The group will work in a new, superbly equipped research center under construction at Upper Merion in suburban Philadelphia for occupation in 1982.

We are seeking research scientists with three or more years post-doctoral experience (reference MB1-1), post-doctoral fellows (reference MB1-2) and research associates - BS/MS (reference MB1-3) with expertise in one or more of the following areas:

analysis of suppressor cells/identification of lymphocyte subsets/cell sorting/
lymphokines/macrophage physiology/
experimental models of autoimmune diseases/
hybridoma production/antibody
characterization/radioimmune assays

Significant opportunities exist for innovative interdisciplinary research and we encourage our scientists to publish their work and to interact fully with the local, national and international scientific communities.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your C.V. and names of three references citing the appropriate reference number given above to: Mr. Walter B. Flagg, **SMITHKLINE CORPORATION**, P.O. Box 7929, 1560 Spring Garden Street, Philadelphia, PA 19101.

We are an equal opportunity employer, M/F/H/V

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POSITIONS OPEN

POSTDOCTORAL RESEARCHERS

The Department of Physiology and Biophysics, University of California, Irvine, is developing a postdoctoral candidate pool for possible openings during the 1981-1982 fiscal year. Openings may be available in the following research areas: ion channels in lipid bilayers, physical chemistry of membranes, mechanisms and regulation of steroid hormone biosynthesis, exercise physiology; in situ electrophoresis of membrane proteins; molecular properties of ion channels in excitable cell membranes. Salary is in accordance with current NIH and NSF postdoctoral stipends which are based upon qualifications and years of prior, relevant postdoctoral experience. *Minorities and women are encouraged to apply.* Send curriculum vitae and names of three references to: **Professor Stephen H. White, Chairman, Department of Physiology and Biophysics, University of California, Irvine, California 92717.**

RANGE SCIENCE FACULTY POSITION. Position: Teaching and research in Range Science Program at Brigham Young University, Provo, Utah. **Date available:** Fall semester 1982 (begins about 25 August). **Qualifications:** Ph.D. degree or near completion in range science or closely related science; at least one degree in range science or management required. **Duties:** Teach courses in range science and occasionally, as needed, in general biology, ecology, and natural resources; counsel range science students; carry out an active research program. **Salary and rank:** Commensurate with qualifications and experience; tenure-track. **Application:** Submit letter of application along with curriculum vitae, graduate and undergraduate transcripts, and three letters of recommendation by 15 January 1982 to: **John F. Vallentine, Search Committee Chairman, Brigham Young University, Provo, Utah 84602. Telephone: 801-378-2278. Equal Opportunity Employer: Brigham Young is an Equal Opportunity Employer.** The person selected must be willing to conform to the behavioral standards of the University. Specifics provided upon request.

RESEARCH ASSOCIATE. Research associate position is available for a Ph.D. in biochemistry to work on phospholipid and prostaglandin biosynthesis in smooth muscle. Salary negotiable. Please submit curriculum vitae and names and addresses of three references to: **Dr. Ata Abdel-Latif, Department of Cell and Molecular Biology, Medical College of Georgia, Augusta, Ga. 30912. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH SCIENTIST. The Charles F. Kettering Research Laboratory has a staff opening for a scientist with 1 to 4 years of postdoctoral experience in areas pertinent to the enhancement of plant productivity. Scientists with research programs related to symbiotic nitrogen fixation, photosynthesis, or the interrelations between photosynthesis and N_2 fixation are encouraged to apply. Expertise in microbial genetics and physiology, cyanobacteria, and plant-microbe interactions, including endomycorrhizal associations, would be especially valuable. This laboratory offers the opportunity for full-time independent research with interaction and collaboration with other scientists working in nitrogen fixation and photosynthesis. Send résumé and references to: **The Search Committee, c/o D. L. Keister, The Charles F. Kettering Research Laboratory, Yellow Springs, Ohio 45387.**

RESOURCE OR MINERAL ECONOMICS

The Department of Engineering and Public Policy at Carnegie-Mellon University (C-MU) is seeking to add a new faculty member at the level of assistant professor in resource or mineral economics to work in collaboration with engineering-based research programs primarily in materials policy but possibly also in hazardous materials, energy systems, and/or environmental systems. There are reasonable prospects for a joint academic appointment with either the School of Urban and Public Affairs or the Department of Social Science. Send résumé with list of publications and statement of research interests to:

**Dr. Indira Nair
03328
Department of Engineering and Public Policy
Carnegie-Mellon University
Pittsburgh, Pa. 15213**

C-MU is an Equal Opportunity Employer.

POSITIONS OPEN

RESEARCH ASSOCIATE

Postdoctoral Electrophysiologist

Experienced in intracellular microelectrode recordings in cardiac muscle and/or vascular smooth muscle. Available immediately. Write to:

**Dr. Nick Sperelakis
Department of Physiology
University of Virginia School of Medicine
Charlottesville, Virginia 22908**

DOCTORAL PROGRAM

DOCTORAL PROGRAM—PHARMACOLOGY

Medical University of South Carolina, Department of Pharmacology, seeks qualified candidates for Ph.D. program. Interdisciplinary environment with research capabilities ranging from gas chromatography-mass spectrometry through cell cultures and animal studies to clinical studies of patients with disease. Research training is available in biochemical pharmacology, cardiovascular pharmacology, drug metabolism, toxicology, analytical chemistry, and clinical pharmacology. Stipends available. Contact: **Graduate Training Director, Department of Pharmacology, Medical University of South Carolina, Charleston, S.C. 29425.**

TRAINEESHIPS

PREDOCTORAL AND POSTDOCTORAL TRAINING IN MOLECULAR VIROLOGY. Several predoctoral and postdoctoral traineeships are available for qualified applicants through NIH training grants. Preceptors include: Drs. G. M. Air, J. C. Bennett, D. H. L. Bishop, R. W. Compans, E. Hunter, E. Lamon, J. Lebowitz, J. Mole, P. Roy, and J. P. Segrest. Research areas include: virus structure, genetics and replication, and viral immunology and membrane biology. Send applications and inquiries to: **Dr. R. W. Compans, Department of Microbiology, University of Alabama in Birmingham, Birmingham, Ala. 35294. An Affirmative Action/Equal Opportunity Employer.**

FELLOWSHIPS

Predocutorial/Postdoctoral Fellowships in American history and material culture, anthropology, biological sciences, earth sciences, history of art, history of technology and science. Tenable at Smithsonian's museum, laboratory, field and research facilities for 6 to 12 months. Deadline: 15 January 1982. Contact: **Office of Fellowships and Grants, Smithsonian Institution, L'Enfant Plaza 3300, Washington, D.C. 20560. Awards are based upon merit, without regard to race, color, religion, sex, national origin, age, or condition of handicap of any applicant.**

STUDENT RESEARCH FELLOWSHIPS. The School of Forestry and Environmental Studies at Duke University invites applications from superior students for graduate research fellowships in environmental science. Potential research areas: forest and wetlands ecology, water quality modeling, population biology, forest micrometeorology, silviculture, and soil science. Preference given to students with strong backgrounds in quantitative methods. Send curriculum vitae to: **Dr. K. H. Reckhow, School of Forestry and Environmental Studies, Box SA, Duke University, Durham, N.C. 27706. Duke University is an Equal Access Institution.**

POSTDOCTORAL FELLOWSHIPS FOR RESEARCH TRAINING IN HYPERTENSION AND CARDIOVASCULAR DISEASE. Two-year postdoctoral fellowships starting in the present academic year are available for qualified applicants with the M.D. or Ph.D. degree as part of a multidisciplinary training program. Applicants must possess U.S. citizenship or permanent resident status. Possible areas for intensive research experience include biochemical, physiological, pathological, and epidemiological studies on the cardiac, renal, adrenal, and neural components of vascular regulation. For further information, write to: **Dr. R. L. Soffer, Departments of Biochemistry and Medicine, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.**

FELLOWSHIPS

POSTDOCTORAL AWARDS IN OCEAN SCIENCE AND ENGINEERING

Woods Hole Oceanographic Institution invites applications for 1-year postdoctoral scholar awards from new and recent doctorates in fields of biology, chemistry, engineering, geology, geophysics, mathematics, meteorology, and physics, as well as oceanography. Recipients of awards are selected on a competitive basis, with primary emphasis placed on research promise.

Fellowship stipend is \$20,000. Appointees are eligible for group health insurance and a modest research budget. Recipients are encouraged to pursue their own research interests independently or in association with resident staff. Completed applications must be received by 1 February 1982 for 1982-1983 awards. Awards will be announced in March. Write for application forms to: **Dean of Graduate Studies, P.O. Box S, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543.**

Equal Opportunity/Affirmative Action Institution

PREDOCTORAL FELLOWSHIPS IN CARDIOPULMONARY AND ENVIRONMENTAL PHYSIOLOGY

The Physiology Division of The Johns Hopkins University, Department of Environmental Health Sciences, invites applications from qualified candidates with interest in obtaining the Ph.D. degree in the above areas of physiology. Admissions material for the academic year beginning September 1982 should be submitted by 1 March 1982. For further information and application forms, please write:

**Dr. Wayne Mitzner
Department of Environmental Health Sciences
Division of Environmental Physiology
The Johns Hopkins University
School of Hygiene and Public Health
615 North Wolfe Street
Baltimore, Maryland 21205**

STATEMENT

U.S. POSTAL SERVICE

Statement required by the Act of 12 August 1970: Section 3685, Title 39, United States Code showing the ownership, management, and circulation of:

1-6. *Science*, published weekly on Friday except the last week in December, at 1515 Massachusetts Avenue, NW, Washington, D.C. 20005. Date of filing: 30 October 1981. This is also the address of the publisher and the editor, who are, respectively, William D. Carey and Philip H. Abelson. There is no managing editor.

7. The owner is American Association for the Advancement of Science, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005. Stockholders: None.

8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities: None.

9. The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes have not changed during preceding 12 months.

10. The average number of copies of each issue during preceding 12 months are: (A) Total No. copies printed: 167,123; (B) Paid circulation: (1) sales through dealers and carriers, street vendors, and counter sales: 350; (2) mail subscriptions: 157,103; (C) Total paid circulation: 157,453; (D) Free distribution by mail, carrier, or other means: samples, complimentary, and other free copies: 4,522; (E) Total distribution: 161,975; (F₁) Office use, left-over, unaccounted, spoiled after printing: 5,148; (F₂) Returns from news agents: none; (G) Total: 167,123.

Actual number of copies of single issue published nearest to filing date are: (A) Total No. copies printed: 171,190; (B) Paid circulation: (1) sales through dealers and carriers, street vendors, counter sales: 183; (2) Mail subscriptions: 157,749; (C) Total paid circulation: 157,932; (D) Free distribution by mail, carrier, or other means: samples, complimentary, and other free copies: 3,522; (E) Total distribution: 161,454; (F₁) Office use, left-over, unaccounted, spoiled after printing: 9,736; (F₂) Returns from news agents: none; (G) Total: 171,190.

I certify that the statements made by me above are correct and complete. (signed) *Robert V. Ormes, Associate Publisher.*



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men and women



RESEARCH SCIENTISTS

**Government of Canada
Ottawa
The National Capital**

The Department of Agriculture requires four research scientists for the Animal Diseases Research Institute

Research Scientists

- 1) **Brucellosis** (Ref. No.: 81-NCRSO-AGR-11)
- 2) **Paratuberculosis** (Ref. No.: 81-NCRSO-AGR-12)

Two immunologists are required to conduct research on diagnostic immunological procedures, immunopathogenesis, prophylaxis, and control of infectious diseases of domestic livestock. Present studies are directed principally at the eradication of brucellosis and the control of paratuberculosis.

Qualifications

Graduation at the doctorate level, or equivalent experience, in immunology or microbiology. Experience in conducting research on infectious diseases and immune response of domestic animals.

Research Scientist

Immunoassay Development

Ref. No.: 81-NCRSO-AGR-13

An immunologist is required to conduct research on immunological diagnostic procedures and immunopathogenic mechanisms of infectious diseases of domestic livestock. The appointee will develop and standardize enzyme linked and other immunoassay procedures.

Qualifications

Graduation at the doctorate level, or equivalent experience, in immunology or immunochemistry. Research experience in the development and application of immunoassay procedures for the diagnosis of infectious diseases, analytical procedures for the purification of antigen and antibody and production of antisera and conjugates.

Research Scientist

Reproduction

Ref. No.: 81-NCRSO-Agr-14

A scientist is required to provide consultative and laboratory services and to conduct research on diseases of the reproductive system of farm animals.

Qualifications

A degree in veterinary medicine recognized by the Canadian Veterinary Medical Association and graduation at the doctorate level, or an equivalence, in theriogenology. Experience in carrying out scientific studies on diseases of the reproductive system and including the use of embryo transfer techniques.

Knowledge of the English language is essential.

Salary: To \$50,028 Canadian

Additional job information is available by writing to the address below:

Toute information relative à ce concours est disponible en français et peut être obtenue en écrivant à l'adresse suivante:

How to apply

Forward your detailed résumé emphasizing your educational and research experience to:

**Brian Beyer
National Capital Region Staffing Office
Public Service Commission of Canada
300 Laurier Avenue West
Ottawa, Ontario K1A 0M7**

Please quote the applicable reference number at all times.

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