

to go to the moon. Yet can any historical explanation of the development of space science that fails to account for them be considered valid? Newell knows well that science is a multifaceted human activity. Indeed, this is a central theme of his book. Unfortunately, however, he ignores it by following Kuhn when relating his study to broader themes in the history of science.

However one judges Newell's search for historical explanation, it is remarkable that in writing a book that might have been just memoirs he looked so deeply. The quest is characteristic of the general quality of his thought. Accessible to nonspecialists, extensive in coverage, perceptive, and well written, *Beyond the Atmosphere* deserves a wide readership.

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Books Received

Advances in Hemoglobin Analysis. Proceedings of a workshop, Ann Arbor, Mich., Sept. 1980. Samir M. Hanash and George J. Brewer, Eds. Liss, New York, 1981. xii, 212 pp., illus. \$22. Progress in Clinical and Biological Research, vol. 60.

Advances in Legume Systematics. Papers from a conference, Kew, England, July 1978. R. M. Polhill and P. H. Raven, Eds. Royal Botanic Gardens, Kew, 1981. Two volumes. xxii, 1050 pp., illus. Paper, £30.

Advances in Metal Processing. Proceedings of a conference, Lake George, N.Y., July 1978. John J. Burke, Robert Mehrabian, and Volker Weiss, Eds. Plenum, New York, 1981. x, 388 pp., illus. \$45. Sagamore Army Materials Research Conference Proceedings, 25.

Advances in Protein Chemistry. Vol. 34. C. B. Anfinsen, John T. Edsall, and Frederic M. Richards, Eds. Academic Press, New York, 1981. x, 372 pp., illus. \$39.

Biological Treatment of Waste-Water. M. A. Winkler. Horwood, Chichester, England, and Halsted (Wiley), New York, 1981. 302 pp., illus. \$79.95.

Biometry. The Principles and Practice of Statistics in Biological Research. Robert R. Sokal and F. James Rohlf. Freeman, San Francisco, ed. 2, 1981. xx, 860 pp., illus. \$29.95.

Bioregulators of Reproduction. Papers from a symposium, New York, June 1980. Georgiana Jagiello and Henry J. Vogel, Eds. Academic Press, New York, 1981. xxvii, 584 pp., illus. \$49.50. P & S Biomedical Sciences Symposia Series.

Biosynthesis of Natural Products. Paolo Manitto. Translated from the Italian. P. G. Sammes, Transl. Ed. Horwood, Chichester, England, and Halsted (Wiley), New York, 1981. 548 pp., illus. \$114.95.

Birth Control and Controlling Birth. Women-Centered Perspectives. Helen B. Holmes, Betty B. Hoskins, and Michael Gross, Eds., Humana, Clifton, N.J., 1981. xiv, 338 pp., illus. Cloth, \$14.95; paper, \$7.95. Contemporary Issues in Biomedicine, Ethics, and Society.

The Conservation of Conservation. The Child's Acquisition of a Fundamental Concept. Adrien Pinard. Translated from the French edition by Helga Feider. University of Chicago Press, Chicago, 1981. xii, 200 pp. Paper, \$15. Chicago Originals.

Contemporary Nephrology. Vol. 1. Saulo Klahr and Shaul G. Massry, Eds. Plenum, New York, 1981. xx, 716 pp., illus. \$49.50.

Contemporary Topics in Molecular Immunology. Vol. 8. F. P. Inman and W. J. Mandy, Eds. Plenum, New York, 1981. xiv, 226 pp., illus. \$32.50.

Contributions to Hemostasis. Papers from a conference, Detroit, May 1980. Daniel A. Walz and Lowell E. McCoy, Eds. New York Academy of Sciences, New York, 1981. xii, 856 pp., illus. Cloth or paper, \$159. *Annals of the New York Academy of Sciences*, vol. 370.

Early Precambrian Supracrustals of Southern Kar-

nataka. J. Swami Nath and M. Ramakrishnan, Eds. Geological Survey of India, Calcutta, 1981. vi, 352 pp. + plates. \$31. Memoirs of the Geological Survey of India, vol. 112.

Earth Changes Ahead. Frank Don. Warner Destiny, New York, 1981. 272 pp., illus. Paper, \$2.75.

Earthquake Risk and Damage Functions. Application to New Madrid. Ben-chieh Liu with the assistance of Chang-tsech Hsieh, Robert Gustafson, Otto Nuttli, and Richard Gentile. Westview, Boulder, Colo., 1981. xx, 298 pp., illus. \$32. Westview Special Studies in Earth Sciences.

Ecology and Ethology of Fishes. Proceedings of a symposium, Normal, Ill., Oct. 1979. David L. G. Noakes and Jack A. Ward, Eds. Junk, The Hague, 1981. 144 pp., illus. \$34. Reprinted from *Environmental Biology of Fishes* 6(1), 1981. Developments in Environmental Biology of Fishes 1.

Error-Correction Coding for Digital Communications. George C. Clark, Jr., and J. Bibb Cain. Plenum, New York, 1981. xiv, 422 pp., illus. \$39.50. Applications of Communications Theory.

Ethnic Change. Papers from a seminar, 1977. Charles F. Keyes, Ed. University of Washington Press, Seattle, 1981. xii, 336 pp. \$20. Publications on Ethnicity and Nationality of the School of International Studies, University of Washington, vol. 2.

Evolution kosmischer, biologischer und geistiger Strukturen. Albrecht Unsöld. Wissenschaftliche Verlagsgesellschaft, Stuttgart, 1981. 152 pp., illus. DM 32. Bücher der Zeitschrift *Naturwissenschaftliche Rundschau*.

Experimental Techniques in Quantitative Chemical Analysis. Vinay Kumar. University Press of America, Lanham, Md., 1981. xiv, 170 pp., illus. Paper, \$10.

Fundamentals of Immunology. Otto G. Bier, Wilmar Dias da Silva, Dietrich Götz, and Ivan Mota. Springer-Verlag, New York, 1981. viii, 444 pp., illus. Paper, \$17.50.

Genetic Research Strategies in Psychobiology and Psychiatry. Papers from a meeting, Palm Beach, Fla., Dec. 1979. Elliott S. Gershon, Steven Matthysse, Xandra O. Breakfield, and Roland D. Ciaranello, Eds. Boxwood Press, Pacific Grove, Calif., 1981. viii, 470 pp., illus. \$38.50. Psychology and Psychopathology, vol. 1.

Geometry—von Staudt's Point of View. Proceedings of an institute, Bad Windsheim, Germany, July 1980. Peter Plaumann and Karl Strambach, Eds. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xii, 430 pp. \$58. NATO Advanced Study Institutes Series C, vol. 70.

Glassy Metals I. Ionic Structure, Electronic Transport, and Crystallization. H.-J. Güntherodt and H. Beck, Eds. Springer-Verlag, New York, 1981. xiv, 268 pp., illus. \$39.80. Topics in Applied Physics, vol. 46.

Humanistic Psychology. Concepts and Criticisms. Joseph R. Royce and Leendert P. Mos, Eds. Plenum, New York, 1981. xx, 312 pp. \$27.50. PATH in Psychology.

Hydrogen Energy Progress. Proceedings of a conference, Tokyo, June 1980. T. N. Veziroglu, K. Fueki, and T. Ohta, Eds. Pergamon, New York, 1981. In four volumes. cxxxvi, 2446 pp., illus. \$385. Advances in Hydrogen Energy 2.

An Illustrated Manual of Pacific Coast Trees. Howard E. McMinn. University of California Press, Berkeley, ed. 2, 1981. xii, 414 pp., illus. Paper, \$6.95. Reprint of the cloth edition.

The Impending Crisis of Old Age. A Challenge to Ingenuity. R. F. A. Shegog, Ed. Published for the Nuffield Provincial Hospitals Trust by Oxford University Press, New York, 1981. xiv, 250 pp. \$29.50.

Infant and Child Feeding. Papers from a symposium, East Lansing, Mich., Oct. 1978. Jenny T. Bond, L. J. Filer, Jr., Gilbert A. Leveille, Angus M. Thomson, and William B. Weil, Jr., Eds. Academic Press, New York, 1981. xxiv, 502 pp., illus. \$49.50. Nutrition Foundation Series.

Life Sciences and Space Research XIX. Proceedings of a meeting, Budapest, June 1980. W. R. Holmquist. Published for the Committee on Space Research by Pergamon, New York, 1981. viii, 232 pp., illus. Paper, \$29. *Advances in Space Research*, vol. 1, No. 14.

Light. Vol. 1. Waves, Photons, Atoms. H. Haken. North-Holland, Amsterdam, 1981 (U.S. distributor, Elsevier North-Holland, New York). xvi, 354 pp., illus. \$34.25.

Luminescence from Biological and Synthetic Macromolecules. Eighth Katzir Conference, New York, June 1980. H. Morawetz and I. Z. Steinberg, Eds. New York Academy of Sciences, New York, 1981. viii, 414 pp., illus. Cloth or paper, \$80. *Annals of the New York Academy of Sciences*, vol. 366.

Making Schools More Effective. New Directions from Follow Through. W. Ray Rhine, Ed. Academic Press, New York, 1981. xxiv, 362 pp. \$28.50. Educational Psychology.

North American Social Report. A Comparative Study of the Quality of Life in Canada and the USA from 1964 to 1974. Vol. 3. Science, Education, and

Recreation. Alex C. Michalos. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 220 pp., illus. Paper, \$29.50.

Nuclear Reactor Safety. On the History of the Regulatory Process. David Okrent. University of Wisconsin Press, Madison, 1981. xviii, 372 pp. \$29.50.

Nuclear Reactor Safety Heat Transfer. Owen C. Jones, Jr., Ed. Hemisphere, Washington, D.C., 1981. xx, 960 pp., illus. \$99. Proceedings of the International Centre for Heat and Mass Transfer, 12.

Organic Chemistry. Alan S. Wingrove and Robert L. Caret, Harper and Row, New York, 1981. xxvi, 1334 pp., illus., + index. \$30.50.

Origin of Cosmic Rays. Papers from a symposium, Bologna, Italy, June 1980. Giancarlo Setti, Gianfranco Spada, and Arnold W. Wolfendale, Eds. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 410 pp., illus. Cloth, \$52.50; paper, \$23.50. International Astronomical Union Symposium No. 94.

The Protohistoric Period in the North American Southwest, AD 1450–1700. Papers from a conference, Tempe, Ariz., Mar. 1979. David R. Wilcox and W. Bruce Masse, Eds. Arizona State University Department of Anthropology, Tempe, 1981. viii, 446 pp., illus. Paper, \$10. Arizona State University Anthropological Research Papers No. 24.

Psychology and Criminal Justice. Katherine W. Ellison and Robert Buckhout. Harper and Row, New York, 1981. xvi, 446 pp., illus. \$19.50.

The Psychology of Being Human. Zick Rubin and Elton B. McNeil. Harper and Row, New York, ed. 3, 1981. xx, 664 pp., illus. \$20.50.

Pulsars. Papers from a symposium, Bonn, Germany, Aug. 1980. W. Sieber and R. Wielebinski, Eds. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 476 pp., illus. Cloth, \$60.50; paper, \$28.95. International Astronomical Union Symposium No. 95.

Readings in Pharmacology. B. Holmstedt and G. Liljestrand, Eds. Raven, New York, 1981. xiv, 396 pp., illus. Paper, \$19.50. Reprint of the 1963 edition.

Receptor-Mediated Binding and Internalization of Toxins and Hormones. Proceedings of a symposium, Frederick, Md., Mar. 1980. John L. Middlebrook and Leonard D. Kohn, Eds. Academic Press, New York, 1981. xiv, 374 pp., illus. \$29.

Refuse Derived Fuels. Andrew Porteous. Applied Science Publishers, London, and Halsted (Wiley), New York, 1981. xii, 138 pp., illus. \$29.95. Energy from Wastes Series.

Regular Boundary Value Problems Associated with Pairs of Ordinary Differential Expressions. Earl A. Coddington and Hendrik S. V. de Snoo. Springer-Verlag, New York, 1981. vi, 226 pp. Paper, \$14. Lecture Notes in Mathematics, vol. 858.

Relation between Laboratory and Space Plasmas. Proceedings of a workshop, Tokyo, Apr. 1980. Hiroshi Kikuchi, Ed. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xii, 418 pp., illus. \$58. Astrophysics and Space Science Library, vol. 84.

Semigroups. Proceedings of a conference, Oberwolfach, Germany, Dec. 1978. H. Jürgensen, M. Petrich, and H. J. Weinert, Eds. Springer-Verlag, New York, 1981. vi, 222 pp. Paper, \$14. Lecture Notes in Mathematics, vol. 855.

Serial Dissections of the Human Brain. Carlton G. Smith. Urban & Schwarzenberg, Baltimore, 1981. x, 94 pp., illus. \$14.50.

Shallow Waters. A Year on Cape Cod's Pleasant Bay. William Sargent. Houghton Mifflin, Boston, 1981. xx, 140 pp., illus. + plates. \$17.95.

A Sierra Club Naturalist's Guide to the North Woods of Michigan, Wisconsin, and Minnesota. Glenda Daniel and Jerry Sullivan. Botanical Drawings by Carol Lerner. Sierra Club Books, San Francisco, 1981 (trade distributor, Scribner, New York). viii, 408 pp. Cloth, \$24.95; paper, \$10.95.

Social Environment and Health. Stewart Wolf. University of Washington Press, Seattle, 1981. x, 116 pp., illus. \$8.95. The Jessie and John Danz Lectures.

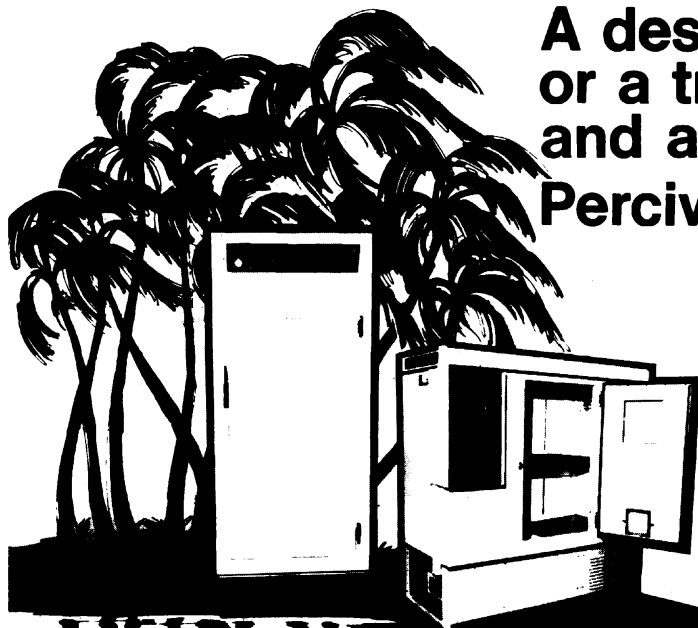
A Theoretical Approach to the Preselection of Carcinogens and Chemical Carcinogenesis. Veljko Veljković. Translated from the Serbo-Croatian. Gordon and Breach, New York, 1981. x, 114 pp. \$36.50.

Theory of Elasticity of an Anisotropic Body. S. G. Lekhnitskii. Translated from the Russian edition (1977). Mir, Moscow, 1981 (U.S. distributor, Imported Publications, Chicago). 432 pp., illus. \$8.

Theory of Metallurgical Processes. Pyrometallurgical Processes. A. Volsky and E. Sergievskaya. Translated from the Russian edition (1978) by Ivan Savin. Mir, Moscow, 1981 (U.S. distributor, Imported Publications, Chicago). 360 pp., illus. \$10.

Thermal Design of Nuclear Reactors. R. H. S. Winterton. Pergamon, New York, 1981. x, 192 pp., illus. \$18.

Webb Society Deep-Sky Observer's Handbook. Vol. 4. Galaxies. Kenneth Glyn Jones, Ed. Enslow, Hillside, N.J., and Lutterworth, Guildford, England, 1981. xviii, 238 pp., illus. Paper, \$15.95.



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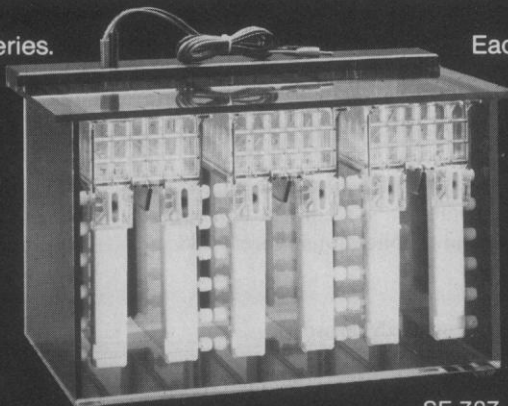
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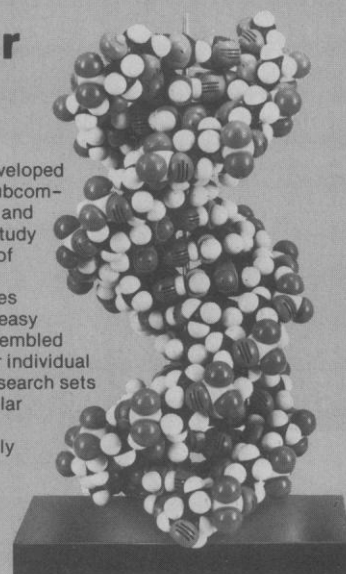
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Cancer Research Manager/Administrator/Coordinator. Ten plus years of experience developing, implementing cooperative research/clinical programs. Prepares grant applications in support of unit projects. Initially organized, and operates extensive volunteer subjects program in major U.S. city. Analytical and judgmental strengths. Verbal, writing, public relations abilities and experience. Wishes to relocate to San Francisco Bay area. Box 267, SCIENCE. 10/23, 30

Clinical/Analytical Chemist, Ph.D. 1976. England. Five years of international experience in medical research; diabetes, cancer research, glycoproteins, drugs and metabolites, toxicology. Extensive experience in the application of GC, GC-MS, HPLC, electrofocusing, TLC, UV, AA, and IR in the development of methods. Currently World Health Organization employee. Publications. Desires faculty/senior research position. No agencies please. Box 262, SCIENCE. 10/23, 30; 11/6, 13, 20, 27; 12/4, 11, 18

Electron Microscopist. B.S. Eight years of research experience (including 5 years of clinical experience) in biomedical SEM and TEM. Extensive laboratory supervisory experience. Numerous publications. Interested in academic, clinical, or industrial position. Box 268, SCIENCE. X

Physiologist, cardiovascular. Ph.D. 1975. Experienced in cardiac dynamics, myocardial ischemia, coronary flow, conscious animal preparation, assist device and valve implantation. Seeking research/teaching position. Box 269, SCIENCE. X

Senior Neurophysiologist, Ph.D., with 17 years of experience in teaching and research. Desires position with clinical team engaged in operating room-based evoked potential studies. Box 270, SCIENCE. X

POSITIONS OPEN

ANALYTICAL CHEMISTRY. Seek Ph.D. holders to apply for tenure-track assistant/associate professor position starting August 1982. Rank dependent upon qualifications. Research interest may be in any area of analytical chemistry or at the interface of analytical and other areas of chemistry. Apply by 15 November with complete résumé, undergraduate and graduate transcripts, a description of research plans, and three reference letters to: **Professor Michael L. Gross, Department of Chemistry, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0304.** *Affirmative Action/Equal Opportunity Employer; applications from women and minorities encouraged.*

ANATOMIST

M.D. or Ph.D. with at least 2 years of postdoctoral experience in teaching and independent research. Should be able to assist in the teaching of any of the branches of anatomy to medical and dental students. Appointment will be made at the rank of assistant professor. Salary is dependent on qualifications and experience. Apply with curriculum vitae and references before 31 December 1981 to: **Dr. Charles E. Stonecker, Department of Anatomy, 2177 Westbrook Mall, The University of British Columbia, Vancouver, British Columbia, Canada V6T 1W5.** Preference will be given to Canadian applicants.

ASSISTANT PROFESSOR—BIOCHEMISTRY

Applications are invited for two tenure-track appointments at the assistant professor level. Candidates should have a Ph.D. or M.D., postdoctoral training and research experience in one or more of the following areas: physical biochemistry, enzymology, or molecular biology. Faculty members are expected to develop strong, independent research programs at the state-of-the-art in addition to instructing students in their area of expertise. These two positions will become available during summer 1982. Funds are available to initiate research. Send curriculum vitae, a description of proposed research program, and a copy of three representative publications or preprints to: **Dr. Barry Marrs, Department of Biochemistry, Saint Louis University School of Medicine, 1402 South Grand Boulevard, Saint Louis, Mo. 63104.** Applicants should arrange to have three letters of recommendation sent directly by referees to the above address. Review of applications will begin on 1 December 1981. *Saint Louis University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR BIOCHEMISTRY

The Medical College of Wisconsin is seeking candidates, Ph.D. or M.D., with research interest and experience in areas of molecular biology involving recombinant DNA technology, or outstanding candidates with research interest in other areas of biochemistry, molecular and cell biology. The successful candidate will be prepared to establish an active research program and to participate in the teaching activities of the department. Position available 1 September 1982; *women and minorities are encouraged to apply.* Submit curriculum vitae, including a brief summary of research interests and names of three references, by 1 December 1981 to:

Biochemistry Search Committee
Department of Biochemistry
MEDICAL COLLEGE
OF WISCONSIN
8701 Watertown Plank Road
Milwaukee, Wisc. 53226
Equal Opportunity/Affirmative Action Employer, M/F/H

ASSISTANT PROFESSORSHIPS BOTANY—MICROBIOLOGY

Auburn University seeks applicants for two tenure-track faculty positions in molecular genetics and plant cell biology. Positions carry responsibility for teaching as well as research and are available after January 1982. Applicants should submit curriculum vitae, transcripts, statement of research interest, and a list of at least three professional references by 15 November 1981 to:

**Professor Paul A. Lemke, Head
Department of Botany, Plant Pathology,
and Microbiology
School of Agriculture, Forestry
and Biological Sciences
Auburn University, Ala. 36849**

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

POSITIONS OPEN

ASSISTANT OR ASSOCIATE PROFESSOR OF BIOCHEMISTRY. The University of Wisconsin invites applications for an assistant or associate professor in the Department of Biochemistry, Madison, Wisc. 53706, in the area of **genetic engineering and fermentation.** Candidates must have interest and experience in the biology and large-scale growth of cells, and especially in the use of pilot plant fermentation procedures to generate biochemical substances such as cloned plasmids, antibiotics, and biochemical reagents. Candidate must have demonstrated the ability to conduct substantial and independent research in biochemistry. He/she must have a strong background of training in biochemistry, appropriate for teaching of a fundamental lecture or laboratory course at either the undergraduate or graduate level. *Women and minority candidates are especially encouraged to apply.* Application forms may be obtained by writing to: **H. F. DeLuca, Department of Biochemistry, University of Wisconsin, Madison, Wisc. 53706.** Completed forms must be received by 1 December 1981, in order to assure consideration. *The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer.*

Two full-time **ASSISTANT PROFESSORS** (on tenure-track) in **BIOLOGY** starting fall 1982. Among courses to be taught are: electron microscopy, embryology, genetics, biochemistry, and general biology. Also seeking professor to conduct workshop in electron microscopy during summer session. Send curriculum vitae to: **Mary Newton, Chairperson, Biology Department, Manhattanville College, Purchase, New York 10577.**

ASSISTANT PROFESSOR OF ENTOMOLOGY. The Department of Entomology, University of California, Riverside, announces a tenure-track position, available 1 July 1982, for an economic entomologist/insect pest management (IPM) scientist with expertise in chemical control technology to develop a comprehensive research program on IPM of citrus and other subtropical orchard crops. The appointment is on an 11-month basis. 90 percent research and 10 percent teaching. Ph.D. degree required. Applicants must have training in applied entomology including field use of insecticides, and in related areas such as plant sciences, ecology, insect toxicology, and statistics. Send curriculum vitae, transcripts, names and addresses of four references, doctoral dissertation summary, bibliography, reprints and manuscripts in press, and statement of research interests to: **Dr. John D. Pinto, Search Committee Chairman, Department of Entomology, University of California, Riverside, Calif. 92521.** Closing date for applications is 1 February 1982, or later, if a suitable candidate has not been identified. *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR IN EUKARYOTIC MOLECULAR BIOLOGY

The Department of Biological Sciences will make a tenure-track appointment for fall 1982. Candidates must have postdoctoral training in **recombinant DNA technology.** Appointee is expected to continue a productive research program in a **eukaryotic system** and to teach at the graduate and undergraduate levels. The department contains an active group of molecular and cellular biologists. Funds provided to initiate research. Send curriculum vitae, future research interests, and names of three referees to:

**Professor Paul S. Lovett
Department of Biological Sciences
University of Maryland Baltimore County (UMBC)
Catonsville, Maryland 21228**

UMBC is an Equal Opportunity/Affirmative Action Employer.

DEPARTMENT OF MICROBIOLOGY at the University of Health Sciences/The Chicago Medical School is seeking an individual with doctoral and postdoctoral training in immunology for a tenure-track position at the **assistant or associate professor level.** We are interested in attracting the best qualified candidate, and we will therefore consider individuals, regardless of specialty, who are able to develop a strong research program in modern microbiology. Teaching duties will include courses at the graduate level and participation in teaching of microbiology to medical students. Send curriculum vitae and names and addresses of three references to: **Chairman, Department of Microbiology, University of Health Sciences/The Chicago Medical School, 3333 Green Bay Road, North Chicago, Illinois 60064.**

The University of Health Sciences/The Chicago Medical School is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR MOLECULAR BIOLOGY THE UNIVERSITY OF NOTRE DAME

Assistant professor (tenure-track) to conduct active research on the molecular biology of eukaryotes and to interact with colleagues in Chemistry and Microbiology as well as the Biology Department. Teaching (one course per semester) includes courses emphasizing laboratory techniques in molecular biology, and specialty courses. Appointment begins fall semester 1982. The Biology Department's strengths include parasitology, vector biology of diseases, and aquatic biology. Modern building.

Submit curriculum vitae, list of publications, names of three referees, and statement of research and teaching interests to: **Dr. Theodore J. Crovello, Chairman, Department of Biology, University of Notre Dame, Notre Dame, Indiana 46556.** *Notre Dame is an Affirmative Action Employer. Qualified women and minority group candidates are urged to apply.*

BACTERIOLOGIST for research and teaching. Opportunities for advancement and tenure consideration after appropriate service. Rank is open; salary is competitive and dependent upon qualifications. Requirements: Ph.D. and postdoctoral experience, which includes training in bacteriology. D.V.M. degree preferred but not essential. An opportunity for an industrious scientist to join a progressive interdisciplinary department. Contact: **Robert B. Wilson, Chairman, Department of Veterinary Microbiology and Pathology, Washington State University, Pullman, Wash. 99164.** *Washington State University is an Equal Opportunity/Affirmative Action Employer. In order to assist our efforts to meet Affirmative Action goals, minority, handicapped, and women candidates are encouraged to identify themselves as such in their applications.*

CARDIOVASCULAR PHYSIOLOGIST

Applications for assistant professorship(s) are sought from individuals actively investigating the microcirculation, its control or utilizing muscle cell culture preparations. A tenure-track and a fixed-term position are currently available. Postdoctoral experience and effective teaching capability are expected. Qualified women and minority candidates are welcomed. Curriculum vitae, a short statement of research plans, and a list of at least three references should be sent as soon as possible to: **Cardiovascular Search, Department of Physiology 206H, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514.** *An Affirmative Action/Equal Opportunity Employer. Candidates applying by 27 November will be given first consideration.*

CELLULAR ENDOCRINE PHYSIOLOGIST

Applications for tenure-track assistant or junior associate professorship are sought from individuals with active postdoctoral research on cellular and subcellular hormone mechanisms. Investigative approaches utilizing recombinant DNA and/or tissue culture techniques are particularly desirable. Effective teaching capability is expected. Qualified women and minority candidates are welcomed. Curriculum vitae, a short statement of research plans, and a list of at least three references should be sent as soon as possible to: **Cellular Endocrine Search, Department of Physiology 206H, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514.** *An Affirmative Action/Equal Opportunity Employer. Candidates applying by 15 November will be given first consideration.*

CHIEF CURATOR OF LIFE SCIENCES, Natural History Museum of Los Angeles County. Applications are invited for the above position, which will become vacant on 1 March 1982 following the retirement of Dr. Fred S. Truxal. The position requires a natural scientist with a distinguished research record who must be an able administrator with the ability to generate research and development funds. The successful applicant will administer the Life Sciences Division, incorporating the disciplines of zoology, botany, and anthropology, and will be required to coordinate exhibit programs, to demonstrate and foster excellence in research activities and collection management, and to function effectively in a complex administrative environment. Applications, with names of three referees, should be submitted before 31 December to: **The Chairman, Life Sciences Search Committee, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, Calif. 90007.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

BIOCHEMISTRY FACULTY POSITION. The Department of Biochemistry, Virginia Tech (VPI & SU), is seeking applicants for a 12-month, tenure-track faculty appointment, rank open. Applicants should be qualified to teach biochemistry at the graduate level, have demonstrated excellence in research, and be prepared to establish an active research program in biochemistry. Ph.D. required, postdoctoral experience preferred. More senior applicants should demonstrate experience related to their academic level. Preference will be shown to applicants experienced in molecular biology. For consideration, curriculum vitae, list of publications, brief description of research plans, and three letters of reference should be sent by 31 December 1981 to: **Bruce M. Anderson, Head, Department of Biochemistry, VIRGINIA TECH, Blacksburg, Va. 24061-1599.** *VPI & SU is an Affirmative Action/Equal Opportunity Employer.*

BOTANIST—Assistant or associate research professor to participate in developing a sugar maple research program in areas of physiology, biochemistry, or other basic or applied aspects of maple sap and syrup production. Leadership qualities, ability to work with people, and potential to participate in competitive funding are essential in order to expand the ongoing research and extension activities of the maple research program. The Botany Maple Research Laboratory is located in a well-equipped Life Science Building in the center of the biosciences complex of the University, and there is a 200-acre physiology-ecology field laboratory for maple research in the nearby foothills of the Green Mountains. The successful applicant will join two other principal researchers and supporting staff.

The University of Vermont is located on Lake Champlain and overlooks the Green Mountains and the Adirondacks. The region is noted for its quality of life and accessibility of skiing, sailing, hiking, hunting, and fishing.

Send complete résumé, transcript, and three letters of recommendation by 15 January 1982 to: **Dr. Hubert W. Vogelmann, Chairman, Department of Botany, University of Vermont, Marsh Life Science Building, Burlington, Vermont 05405.**

The University of Vermont is an Equal Opportunity Employer.

CELL BIOLOGIST. The Department of Anatomical Sciences will have two faculty positions open during the coming academic year. Applicants should have an active research program in the areas of cellular motility, cellular biomechanics, or neuromuscular interaction. Teaching responsibilities include microscopic anatomy for medical, dental, and allied health students and participation in university-wide graduate training. Level of position dependent on qualifications. Excellent research facilities available. Reply with curriculum vitae to: **Dr. Maynard Dewey, Chairman, Department of Anatomical Sciences, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, N.Y. 11794.** *State University of New York at Stony Brook is an Equal Opportunity/Affirmative Action Employer. AK Number 173.*

CHAIRMANSHIP Department of Radiology University of Michigan Medical School

The University of Michigan Medical School is seeking an academic radiologist to assume the chair of its Department of Radiology. Qualifications include: national stature as a leader in the field of radiology, Board-certification in radiology, clinical competence, administrative experience, demonstrated commitment to patient care, teaching, research, and scholarly activity, training and/or work experience in an academic institution. *A nondiscriminatory, Affirmative Action/Equal Opportunity Employer.* Code 01BH. Respond to:

Robert E. Reed, M.D.
Associate Dean
University of Michigan Medical School
M7320A Medical Science Building I
Ann Arbor, Michigan 48109

CHEMIST—BIOCHEMIST. Postdoctoral position to study mechanism of a pyrimidine biosynthetic metalloenzyme and to develop mechanism-based inhibitors. SS kinetics, protein modification, synthetic organic chemistry, NMR and other physical and spectral techniques will be used. Two-year appointment at NIH salary scale. Send curriculum vitae and two letters of recommendation to: **Dr. Kim D. Collins, Department of Biochemistry, The Johns Hopkins University, 615 North Wolfe Street, Baltimore, Maryland 21205.**

POSITIONS OPEN

UNIVERSITY OF ALBERTA KILLAM MEMORIAL CHAIR IN SCIENCE AND ENGINEERING

Bequest from the late Dorothy J. Killam has resulted in the endowment of two Killam Memorial Chairs in any area of basic science or engineering. These are senior appointments offered to distinguished individuals to permit them to carry on high-level research and graduate teaching.

One of the Killam Memorial Chairs will become available on 1 July 1982. We are seeking outstanding candidates to fill this position. We invite nominations and applications on behalf of or from distinguished individuals interested in this chair. Inquiries, nominations, and applications should be directed to:

Dr. J. Gordon Kaplan
Vice President, Research
University of Alberta
Edmonton, Alberta, Canada T6G 2J9

Nominations should be received before 1 December 1981.

Candidates for the **CHAIRMANSHIP** of the Department of Diagnostic Radiology at the University of Alabama School of Medicine are being sought. Qualifications include an established reputation in patient care, research, teaching, and administration in academic medicine. Nominations and applications should include curriculum vitae and bibliography, and should be submitted to:

Dick D. Briggs, M.D.
Chairman, Diagnostic Radiology Search Committee
Lyons-Harrison Building, Room 323
University Station
Birmingham, Alabama 35294

Deadline for receipt of applications is 30 November 1981.

The University of Alabama in Birmingham is an Equal Opportunity/Affirmative Action Employer.

COMMUNITY AND/OR ECOSYSTEMS ECOLOGIST

The Department of Biology, College of the Holy Cross, invites applications for a tenure-track position beginning fall 1982. We are seeking a community and/or ecosystems ecologist. Preference will be given to an ecologist with experience in invertebrate zoology. Candidates will be expected to teach a course in general ecology for biology majors and to participate in departmental courses at the introductory level. Opportunities to give an upper division course in their area of specialization are available. Candidates must have a strong commitment to undergraduate teaching and to developing a research program that can include undergraduates. Rank and salary depend on qualifications and experience. Submit curriculum vitae, statement of research and teaching interests, and names of three referees by 7 December 1981 to:

Peter Parsons, Ph.D.
Chairman of Search Committee
Department of Biology
College of the Holy Cross
Worcester, Mass. 01610

The College of the Holy Cross is an Equal Opportunity/Affirmative Action Employer.

COMPARATIVE PHYSIOLOGIST. Applications are invited for the position of assistant professor of biology, to start spring or fall 1982. Completed Ph.D. required. Teaching responsibilities include human anatomy and physiology and comparative physiology. Research in physiology of tropical marine or terrestrial animals expected. Please send curriculum vitae, transcripts, and three letters of recommendation to: **Dr. Daniel B. Matlock, Chairman, Department of Biology, University of Guam, Mangilao, Guam 96913.** Closing date is 1 December 1981.

CYTOGENETICIST, desirous of academic career at Johns Hopkins Oncology Center. Initial appointment—research associate, instructor, or assistant professor, depending on qualifications—for fall 1982. Initially research related to needs of a major bone marrow transplant program. Individual will be encouraged and expected to develop his/her own academic interests and research funding as he/she desires. Excellent opportunity for collaboration in laboratory and clinical areas. Prefer those interested in hematological malignancy, but not absolutely required. Ph.D. or M.D. required. Send curriculum vitae and particulars to: **Dr. George W. Stantos, Oncology Center, 3-127, Johns Hopkins Hospital, 600 North Wolfe Street, Baltimore, Md. 21205.** *An Affirmative Action/Equal Opportunity Employer.*

DEAN SCHOOL OF VETERINARY MEDICINE

University of California, Davis

The University of California, Davis, invites applications and nominations for Dean, School of Veterinary Medicine. The School, established in 1948, offers the bachelor of science degree in veterinary science, the doctor of veterinary medicine, and the master of preventive medicine degrees. The master of science and the doctor of philosophy degrees are offered through the Graduate Division. The School has primary responsibility for research on subjects related to animal disease and on animal models of human diseases. Service programs are directed toward aiding the veterinary profession to serve the public need.

The dean has responsibility for academic leadership, representing the School to the administration, management of resources, articulating to the community goals and programs of the School, and campuswide policy development through membership on the Council of Vice Chancellors and Deans. In addition, the dean is responsible for the California Primate Research Center, the Animal Resources Service, the Laboratory for Energy-Related Health Research, and the Veterinary Medicine Clinical Teaching Facilities at Davis and Tulare. The dean reports to the chancellor.

Qualified applicants should have distinguished performance in teaching and research equivalent to that required for a tenured position at the University of California, a commitment to excellence, and an interest in and demonstrated capability for academic administration.

The salary is commensurate with experience and qualifications.

Nominations and applications, including a current professional résumé, should be sent to: Chancellor James H. Meyer, University of California, Davis, Calif. 95616. Position will remain open until filled. Nominations and applications desired by 15 December 1981. *Equal Opportunity Employer/Affirmative Action Plan, F/M/H.*

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 person with research interests in the molecular aspects of developmental biology, who will teach an undergraduate course in that area, and
- 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.

Inflammation Research

The Pharmaceutical Research Division of our prestigious multi-national pharmaceutical/consumer products corporation has a scientific leadership opportunity to head an inflammation research unit.

The individual we seek will have an **MD or Ph.D** with training in biochemistry, pharmacology or equivalent with a minimum of 10 years post doctoral research experience into the mechanisms of inflammation or anti-inflammatory drug action. Supervisory experience of senior scientific personnel is required, since this individual will supervise an active group of 15-20 people including senior staff members involved in an active multi-disciplinary research effort. Biochemical research background, as well as some industrial experience desirable.

We offer a stimulating scientific environment with opportunity for advancement. The successful candidate will receive compensation commensurate with education and experience together with a program of comprehensive company benefits including profit sharing.

Qualified candidates should send their C.V. including biography and salary requirements in confidence to: D. J. Lum, Manager, Personnel Administration, Schering-Plough, Research Division, Box DD-81-9, 60 Orange Street, Bloomfield, New Jersey 07003.



Schering-Plough

We Are An Equal Opportunity Employer M/F

SENIOR PHARMACOLOGIST

Allergy Research

Boehringer Ingelheim is one of the most highly regarded and fastest-growing ethical pharmaceutical/health care companies in the United States. Our major commitment to worldwide basic research in new therapeutic agents has created this challenging opportunity for a Ph.D.-level Senior Pharmacologist seeking both scientific and management career potential.

Emphasizing original research contributions, the position involves collaboration with colleagues of high professional attainment, as well as the building and daily supervision of a research team.

Your training and interest should relate strongly to the field of allergy and related areas, especially autotoxin and smooth muscle pharmacology. Specialized preparation in pharmacology would be relevant to our long-range goals, while immunopharmacology would be desirable for current investigations.

Our modern, attractive R&D center, equipped with advanced technical facilities, is located about 60 miles from New York City. The area is noteworthy for a wide range of recreational and cultural resources.

We offer a competitive compensation/benefits package and the advantages of a stimulating and highly professional working environment. For consideration, please send resume with salary requirement, in confidence, prior to November 20, 1981, to:

Stuart E. Rapp
Personnel Manager, R&D



Boehringer Ingelheim

90 East Ridge
P.O. Box 368
Ridgefield, CT 06877

An Equal Opportunity
Employer M/F/H

POSITIONS OPEN

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 collaboration with local state university presents opportunities for participation of graduate students in computer sciences. 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.

The National Oceanic and Atmospheric Administration (NOAA) announces a Senior Executive Service Vacancy for the position of **DIRECTOR, GEODETIC RESEARCH AND DEVELOPMENT LABORATORY (GRDL)** in the National Geodetic Survey, a component of the National Ocean Survey. The duty location is Rockville, Maryland. The salary range is \$47,889 to \$50,112.50 per annum. Duties include: providing technical and administrative supervision over employees and activities of GRDL; advising officials on the state of scientific knowledge in geodesy and making recommendations for research and development; exercising scientific and technical knowledge of contributing publications to professional journals and making presentations at national and international meetings; and advising and consulting scientists and executives in improvement of geodesy and related fields. Experience in management of scientific programs, geodesy, and solid earth sciences is required. Apply to: **NOAA/NOS, 6001 Executive Boulevard, Rockville, Maryland 20852, attention: MB/PER15:TR.** NOAA is an Equal Opportunity 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.**

DIRECTOR OF THE OFFICE OF ACADEMIC COMPUTING AND BIOSTATISTICS The University of Texas Medical Branch at Galveston (UTMB)

The newly created Office of Academic Computing and Biostatistics will report to the office of the Dean of Medicine. The individual chosen as director will be responsible for all aspects of the development, organization, and management of computing and biostatistical service capabilities in support of research and education.

Candidates should understand both computing and biostatistical needs of faculty in an academic medical center and should have management experience in academic computing, effective interpersonal skills, and academic credentials for a faculty appointment in the School of Medicine. The salary will be in the range of \$45,000 to \$55,000. Please send current curriculum vitae and a letter by 9 November 1981 to: **Julian I. Kitay, M.D., Associate Dean, Office of the Dean of Medicine, Suite 528 Administration Building, A33, The University of Texas Medical Branch, Galveston, Texas 77550.** UTMB is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

DIRECTOR OF RESEARCH AND PROGRAM DEVELOPMENT UNIVERSITY OF NORTH DAKOTA

The director, who reports to the Vice President for Academic Affairs, is the principal administrative officer responsible for assisting the faculty in the promotion and development of research. Applicants should have an earned doctorate or terminal professional degree and must have substantial experience in sponsored project administration, either as a faculty member or as a research administrator. Salary open and commensurate with experience. Position available 1 January 1981. For more information, contact: **Mrs. Dean VanVoorhis, Office of Vice President for Academic Affairs.** Send curriculum vitae and names of at least three references by 15 November to: **Office of Vice President for Academic Affairs, University of North Dakota, Grand Forks, N.D. 58202.** An Equal Opportunity/Affirmative Action Employer.

DIRECTOR—LABORATORY FOR APPLICATIONS OF REMOTE SENSING (LARS), PURDUE UNIVERSITY

The director is responsible for all activities of LARS, an interdisciplinary research unit. Duties include: leader and technical adviser for both fundamental and application research programs in remote sensing; coordination of programs with other departments, the scientific community, and with potential user agencies; overall direction of laboratory; and research (25 percent) in remote sensing. Eligible applicants must hold a Ph.D. in one of the natural or physical science disciplines associated with remote sensing and must have demonstrated excellence in research. Administrative experience and background in remote sensing is highly desirable. Letters of nomination, interest, or inquiry should be sent by 1 December 1981 to: **B. R. Baumgardt, Director of the Agricultural Experiment Station, AGAD, Purdue University, West Lafayette, Ind. 47907.** Purdue University is an Equal Opportunity/Affirmative Action Employer.

FACULTY APPOINTMENT. The Department of Microbiology, College of Medicine, has an opening for an **assistant professor.** Responsibilities include teaching graduate and medical students. Preference will be given to candidates who will develop a strong research program in the control of gene expression or gene organization in prokaryotes, eukaryotes, or viruses. Use of recombinant DNA techniques is especially desirable. Postdoctoral experience is required. Send curriculum vitae and three letters of reference to: **Chairman, Microbiology Search Committee, Department of Microbiology, College of Medicine, University of California, Irvine, Irvine, Calif. 92717.** An Affirmative Action/Equal Opportunity Employer.

FACULTY POSITIONS IN MOLECULAR GENETICS

The Department of Microbiology at the University of Cincinnati College of Medicine is undergoing a major expansion and invites applications for tenure-track positions at either the junior or senior faculty level. Candidates should be involved in a vigorous and creative research program and should have demonstrated independence as laboratory investigators. Also the applicant should be an effective teacher and be able to direct graduate students. Research interests can be either in prokaryotic or eukaryotic molecular genetics. Applicants should submit curriculum vitae, a short statement of research interests and accomplishments, and the names of three scientists willing to write letters of recommendation. These should be forwarded to: **Dr. Jerry B. Lingrel, Chairman, Department of Microbiology, University of Cincinnati College of Medicine, 231 Bethesda Avenue, Cincinnati, Ohio 45267.** The University is an Equal Opportunity/Affirmative Action 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 IN BIOCHEMISTRY

The Department of Biochemistry and Biophysics at Texas A & M University invites applications for 12-month tenure-track positions. Rank and salary will be commensurate with experience. Interest is expressed in biochemists with experience in plant molecular biology; however, individuals with interests in other areas of biochemistry and molecular biology will be considered.

Applicants should send curriculum vitae, summary of future research plans, and names of three references to: **Dr. E. G. Sander, Head, Department of Biochemistry and Biophysics, Texas A & M University, College Station, Texas 77843.** Telephone: 713-845-5032. Closing date is 1 December 1981 or until suitable applicants are found. *Texas A & M University is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN MEDICAL BACTERIOLOGY. The Department of Tropical Medicine and Medical Microbiology, School of Medicine, University of Hawaii, invites applications for a full-time tenure-track faculty position. Teaching responsibilities include medical student bacteriology and several graduate-level courses. Candidate should have demonstrated research excellence in an appropriate area of medical bacteriology. Rank and salary dependent on qualifications. Apply to: **Dr. Scott B. Halstead, 3675 Kilauea Avenue, Honolulu, Hawaii 96816.**

The Department of Physiology and Biophysics is seeking candidates for **TWO NEW FACULTY POSITIONS.** Applicants must have a doctoral degree and several years of postdoctoral experience, and should be prepared to carry out independent research and to participate in the teaching activities of the department. We will consider applicants in any area of physiology or biophysics, but will give preference to people working in the areas of cellular neurobiology, membrane physiology, and the regulation of metabolism. We plan to appoint tenure-track assistant professors, but will also consider applicants for appointment as tenured associate and full professors. Applicants should send their curriculum vitae and bibliography, reprints of several recent papers, a statement of current research interests, and the names of three references to: **Dr. Robert L. Perlman, Head, Department of Physiology and Biophysics, University of Illinois, College of Medicine, P.O. Box 6998, Chicago, Ill. 60680.** Applications should be received by 15 December 1981. *The University of Illinois is an Equal Opportunity/Affirmative Action Employer.*

GEOLOGIST

Millsaps College seeks a person to teach undergraduate courses in stratigraphy, structural geology, geomorphology, and sedimentation. Specialized interests such as clay mineralogy, hydrology, and petrology also desirable. Ph.D. required; previous teaching experience preferred. Tenure-track position available fall 1982. Salary and rank commensurate with qualifications.

Send résumé and names of three references to:

Dr. Robert King
Academic Dean
Millsaps College
Jackson, Miss. 39210

IMMUNOLOGIST

The Department of Biology at the University of California, Riverside, anticipates having an opening for an **assistant professor in immunology.** The appointment will be effective 1 July 1982 with duties beginning September 1982. Candidates must have evidence of ability to initiate and sustain a creative research program, and enthusiasm and skill in teaching and supervision in both undergraduate and graduate programs. Teaching duties will consist of undergraduate and graduate courses in immunology as well as undergraduate teaching of vertebrate histology and/or embryology. Applicants should send up-to-date curriculum vitae, a brief description of research and teaching goals, and reprints of scientific papers and should request letters from three individuals who, from close personal knowledge, can evaluate the applicant. *The University of California is an Equal Opportunity/Affirmative Action Employer.* Applications are invited from all qualified individuals.

Send applications by 16 November 1981 to:

Professor R. Ruibal, Chairman
Department of Biology
University of California
Riverside, California 92521

NATIONAL RESEARCH COUNCIL

RESEARCH AWARDS

CHEMICAL SYSTEMS LABORATORY

Basic and applied research opportunities exist in areas of organic, physical, and surface chemistry and atmospheric physics, including conformational analysis, stereochemistry, oxidation and hydrolysis mechanisms, reactions of radical ions, interfacial aspects of decontamination, penetration mechanisms through membranes, synthesis of reactive liquid crystals, spectroscopy of oriented molecules, chemical reactions on surfaces, ion-hydrate properties, characterization and optical properties of aerosols, dynamics of aerosol clouds, and aerosolization processes. Details on research programs may be obtained from: **Dr. Edward J. Pozio-mek, telephone: 301-671-4144**, Chemical Systems Laboratory is located at Aberdeen Proving Ground, Maryland, at the head of the beautiful Chesapeake Bay and within easy driving distance of Philadelphia, Baltimore, and Washington. Completed application must be postmarked not later than 15 January 1982. For application materials and a descriptive brochure, write:

Associateship Office JH 610-E7
National Research Council
2101 Constitution Avenue, NW
Washington, D.C. 20418

COLLOID CHEMIST

The Amoco Research Center has an immediate opening for an innovative Colloid Chemist to work on the fundamentals of particle-fluid interactions in non-aqueous media. The position requires a Ph.D., preferably with some experience in non-aqueous colloid chemistry. Two or more years of post-doctoral or equivalent industrial experience are desirable but not essential. This challenging assignment would provide outstanding exposure and long-range growth potential in a multi-disciplinary research program in synthetic fuels.

Our Research Center is located in Naperville, near Chicago, and offers a choice of urban, suburban or rural living. The salary is commensurate with experience and a comprehensive benefit package is provided. If you qualify for this position, please send a resume with a detailed qualifying letter in confidence to:



Professional Recruiting Coordinator
AMOCO RESEARCH CENTER
P.O. Box 400
Naperville, Illinois 60566

An Equal Opportunity Employer M/F

VETERINARY PATHOLOGIST

...for staff position. Prefer broad based experience and/or training in laboratory animal pathology, especially Toxicologic Pathology. Duties include designing, conducting and reporting of preclinical drug safety evaluation studies, with emphasis on the gross, histopathologic and clinicopathologic evaluation of animals used in such studies. Requirements include D.V.M. and advanced training in pathology.

Interested applicants should send resume and salary requirements to:

**Wyeth Wyeth
Laboratories Inc.**
P.O. Box 861
Paoli, Pa. 19301

An Equal Opportunity Employer, M/F/H

DEAN

GRADUATE SCHOOL OF INDUSTRIAL ADMINISTRATION CARNEGIE-MELLON UNIVERSITY (CMU)

The Graduate School of Industrial Administration is a leading professional school of management with an outstanding record of pioneering research, interdisciplinary activities, scholarship, and education at the master's, doctoral, and post-professional levels.

The successful candidate will have proven ability to provide leadership in identifying, nurturing, coordinating, and promoting the collaborative development of research and educational programs. The person chosen will share the commitment to excellence and innovation in research and teaching that has characterized the school's history and will have the ability to work with and develop the talents and potential of creative professionals in behavioral sciences, economics, management, operations research, and other disciplines.

Carnegie-Mellon University's 90-acre campus, adjoining beautiful 450-acre Schenley Park, is only 4 miles from downtown Pittsburgh. CMU is surrounded by one of the most attractive and affordable urban residential areas in the United States. Pittsburgh is the nation's third largest center of corporate headquarters and for research and development. Pittsburgh boasts a sparkling downtown, a multitude of cultural enticements and sports events, as well as lodging, restaurants, and mass transit. It is also a model for urban redevelopment. An alliance of business, education, and political leaders which led Pittsburgh's far-famed transformation of the 1950's is reunited and a second transformation is now under way.

Candidates should address letters, including bio-bibliographic material, to:



Dean Search Committee
Graduate School of Industrial Administration
Carnegie-Mellon University
Pittsburgh, Pennsylvania 15213

An Equal Opportunity Employer

POSITIONS OPEN

FACULTY POSITIONS: Full-time faculty positions available spring 1982. Adult and child psychiatry inpatient and outpatient services, 454-bed university hospital; serving also as consultants for Eastern Kentucky region. Medical students and resident teaching responsibilities. Submit curriculum vitae and inquiries to: **Chairman, Department of Psychiatry, University of Kentucky College of Medicine, Lexington, Kentucky 40536.** *The University of Kentucky is an Equal Opportunity 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.*

IMMUNOLOGIST/ BIOLOGIST, Ph.D.

Experience in hybridoma technology and immunochemistry. Tenure-track position with full benefits at Baylor College of Medicine, Houston, Texas. Please send curriculum vitae and bibliography to:

Box 242, SCIENCE

Baylor is an Equal Opportunity/Affirmative Action Employer.

The Department of Molecular, Cellular, and Developmental (MCD) Biology of the University of Colorado, Boulder, seeks new **JUNIOR-LEVEL FACULTY** to fill positions beginning September 1982. Applicants should have proven ability for superior research and teaching in molecular, cellular, or developmental biology. Salary competitive and negotiable, depending on experience. Send curriculum vitae, bibliography, and the names and addresses of three references to: **The Search Committee, Department of MCD Biology, Campus Box 347, University of Colorado, Boulder, Colo. 80309.** Closing date for applications is 15 December 1981. *The University of Colorado is an Equal Opportunity/Affirmative Action Employer.*

MASS SPECTROMETRIST

The Laboratory of Environmental Chemistry of the National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, N.C., has a permanent position available for a qualified mass spectrometrists at the salary of \$22,486. The qualification requirements are a B.S. in one of the physical or life sciences or engineering plus 3 years of professional experience in appropriate field or a combination of 30 semester hours in chemistry, 6 semester hours in physics, math through calculus, plus enough additional appropriate education or experience to equate to a 4-year college degree, plus 3 years of appropriate professional experience. Evidence of specialization in analytical mass spectrometry resulting in publications and applicant's ability to work independently in a supportive role would be desirable.

The research efforts of this Laboratory are directed toward the molecular-level understanding of mechanisms of chemical toxicity. Research programs involve activities in analytical, organic, and physical chemistry and biochemistry. Interdisciplinary strategies in chemistry and biology are emphasized. Environmental factors are assessed for their potential to affect humans. Analytical mass spectrometry has an important supportive role for these programs in the Laboratory and the Institute.

Applicants must be found to be eligible on a Civil Service Register. If interested, please send curriculum vitae and the names of two references by 20 November 1981 to: **Elena D'Orazio, Personnel Specialist, NIEHS, P.O. Box 12233, Research Triangle Park, N.C. 27709.**

The NIEHS is an Equal Opportunity Employer.

POSITIONS OPEN

IMMUNOLOGY

The Department of Biology and the Rosenstiel Center of Brandeis University invite applications for a tenure-track position at the assistant or associate professor level for a molecular biologist with a strong research interest in immunology. The level of appointment will depend on the background and experience of the candidate and excellence of research, both accomplished and planned. Excellence in teaching is also expected. Send curriculum vitae and a short description of accomplished and planned research and arrange for three letters of reference to be sent to: **Dr. Alfred Nisonoff, Rosenstiel Center, Brandeis University, Waltham, Mass. 02254.** Deadline for applications is 15 November 1981. *We are an Equal Opportunity/Affirmative Action Employer.*

IMMUNEX CORPORATION SEATTLE, WASHINGTON

Seeks **molecular biologists, immunologists, and biochemists** for its new research facility which will open in Seattle early in 1982. Immunex Corporation is a new research and development company working in the area of immunoregulation by lymphokines. Both staff scientists (assistant professor equivalent) and senior staff scientist positions are available. Applicants with outstanding academic records are sought and, for senior positions, evidence of independence (for example, principal investigation of peer-reviewed grants) will be necessary. Excellent salaries and fringe benefits package. Send curriculum vitae and names of at least two references to:

**Dr. Steven Gillis or Dr. Christopher S. Henney
Immunex Corporation
P.O. Box 70668
Seattle, Washington 98107**

NORTHWESTERN UNIVERSITY DEPARTMENT OF NEUROBIOLOGY AND PHYSIOLOGY

This newly formed department is seeking to fill two **tenure-track faculty positions** in the general area of **neuroendocrinology**. The specific area of specialization is less important than the excellence of the academic and research capabilities of the candidate. Applicants should send curriculum vitae, a brief description of research accomplishments and goals, and the names of three references to: **Dr. Christina Enroth-Cugell, Chairman, Search Committee, Department of Neurobiology and Physiology, Room 3754, Technological Institute, Northwestern University, Evanston, Illinois 60201.**

NEUROIMMUNOLOGIST. The C. V. Whitney Laboratory, a research center of the University of Florida (UF) dedicated to experimental marine biology and medicine, invites applications from persons interested in approaching neurobiology from an immunological viewpoint. This is a full-time (12-month) tenure-earning position at the assistant or associate professor level with an adjunct appointment in an academic department at UF. We are particularly interested in persons who are primarily competent immunologists but who have training or experience in neurobiology, preferably using marine animals. The successful applicant will be expected to develop an independent research program interacting with existing projects in cell membrane biology, pharmacology, and physiology. Send letter stating current and future research interests, curriculum vitae, and names of four references by 15 December 1981 to: **Dr. Barry Ache, C. V. Whitney Laboratory, University of Florida, Route 1, Box 121, St. Augustine, Fla. 32084.** *The 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 several appointments at the assistant professor level. Preferred areas of theoretical and experimental research are particle physics, condensed matter physics, statistical physics, astrophysics, atomic and plasma physics, and nuclear physics.

Applicants should write as soon as possible, and definitely before 15 December 1981, to: **The Chairman, Department of Physics, University of California, Berkeley, Calif. 94720,** giving curriculum vitae, publication list, and references. This is a re-advertising of previously announced openings. Applicants who applied earlier this academic year need not reapply. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

The Center for Coastal Studies, Scripps Institution of Oceanography, has an opening for a **PHYSICAL, COASTAL OCEANOGRAPHER** to conduct research in an ongoing program of innovative sediment management technology with emphasis on sediment response to the forcing functions of waves, winds, and currents. The incumbent will select and publish on research projects into fundamental physics of coastal and harbor sedimentation and advance alternatives to current coastal engineering practices.

Appointments are for 1 or 2 years (renewable) at the postgraduate research or assistant research level. Qualifications for postgraduate research level are Ph.D. or equivalent in physical oceanography/coastal processes and/or applied physics/mechanics with emphasis on granular/fluid mechanics. Appointment at the assistant research level requires the above qualifications and a demonstrated publication record. Salary from \$18,138 to \$25,000, commensurate with qualifications. Submit letter of interest, including résumé and at least three names of references, before 1 December 1981 to: **Dr. D. L. Inman, Director, Center for Coastal Studies, Scripps Institution of Oceanography, University of California at San Diego, La Jolla, California 92093.** Request position profiles at the same address. *An Equal Opportunity/Affirmative Action 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.**

PHYSIOLOGY—Assistant professor position in the Department of Biology available 1 September 1982. Teaching responsibilities include a one-semester nonlaboratory course in general physiology, a one-semester laboratory course in organismic and cellular physiology, and a one-semester advanced laboratory course. The incumbent also will supervise advanced undergraduate research projects in physiology. Ph.D. required with area of specialty in the physiology of invertebrates or plants. *Women and minorities are encouraged to apply.* Send curriculum vitae and names, addresses, and telephone numbers of three referees to: **Dr. Bernard Fried, Chairman, Search Committee, Department of Biology, Lafayette College, Easton, Pa. 18042.** *Lafayette College is an Equal Opportunity Employer, M/F.*

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE wanted for neurophysiological investigation of cerebral ischemia in gerbil model. Experience in evoked potentials/transfer functions helpful. Continuous dialogue with membrane biochemists and clinical neurologists. Project to begin immediately. **Telephone: Fred Callahan, FIRST-MASSEY NEUROLOGICAL INSTITUTE, at 615-383-1512 or 615-329-9444.**

POSTDOCTORAL FELLOW

Available immediately for research on the production of chemicals and medicinals in plant tissue cultures.

Background with experience in plant tissue culture, pharmacognosy, and natural product chemistry desirable. Starting salary up to \$15,400 per year, plus liberal benefits.

Interested persons should send résumé and three letters of recommendation to: **Personnel Office, W. Alton Jones Cell Science Center, Old Barn Road, Lake Placid, New York 12946.**

An Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL POSITION available now to investigate the molecular basis for the coordinate genetic regulation of functionally related genes in a higher plant. The system being studied is the well-characterized set of genes that control anthocyanin pigmentation in the aleurone layer of the maize kernel. Project involves the identification and eventual isolation of mRNA's for two genetically defined anthocyanin biosynthetic enzymes. Experience with nucleic acids preferred. Applications welcome from prokaryotic biologists interested in a plant molecular system. Support available for at least 3 years. Send curriculum vitae and two letters of reference to: **Dr. Hugo K. Dooner, Department of Genetics, Iowa State University, Ames, Iowa 50011.**

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

ASSISTANT PROFESSOR OF ANATOMY

The Department of Anatomy of The Medical College of Pennsylvania invites applications for three tenure-track faculty positions from the following research disciplines: 1. The biology of cell contractile systems; 2. Neurophysiology, especially intracellular recording related to spinal cord functions and behavior; 3. Nerve tissue culture, hybridoma technology and monoclonal antibody production. Candidates for these positions should have a doctoral degree (PhD or MD), 2 years of post doctoral training and demonstrated research productivity. Appointees are expected to develop independent and collaborative research programs and to participate in the teaching of either histology or neuroscience. Send curriculum vitae, summary of research goals and the names of three references to:

DR. LEONARD L. ROSS
Professor and Chairman,
Department of Anatomy

THE MEDICAL COLLEGE OF PENNSYLVANIA

3300 Henry Avenue
Philadelphia, PA 19129

An Equal Opportunity Employer, M/F

MANAGER, INDUSTRIAL TOXICOLOGY

Worldwide leader in the animal and human health care field, Merck & Co., Inc. offers newly created position to Toxicologist capable of leading programs to ensure occupational health among worldwide employees.

Your goal will be to gather appropriate data on potential hazards and translate this information into clear, practical guidelines for use by all management and staff. Credentials for this highly visible role include a PhD in Toxicology or Pharmacology (or equivalent) and five years related experience. A strong commitment and ability to interface with professionals in Industrial Hygiene and Pharmaceutical Safety Assessment are essential.

Salary and benefits reflect the importance of your role. To join Merck's highly regarded scientific community, send resume with salary history to Mr. F. A. Mieso,



MERCK & CO., INC.

P.O. Box 2000, Rahway, New Jersey 07065

An equal opportunity employer m/f

Cell Culture Scientists Innovative projects in biotechnology - Sweden

The Cell Biology Group of Pharmacia Fine Chemicals is progressing research and development of new techniques and processes in the field of Cell Culture. Due to our rapidly expanding program, we have several vacancies for scientists skilled in the art and science of culturing animal cells.

THE PROJECTS:

- R & D of new methods of culturing animal cells, to maximize yields of cells and novel cell products.
- Scaling up of animal cell cultures from laboratory to pilot scale, particularly using microcarrier techniques.
- Optimising process control parameters and specific application developments.
- Installation and running of unique pilot-scale culture systems.

Product Specialists

The Cell Biology Group also has vacancies for Cell Biologists to interface between our own research team and scientists in other laboratories world-wide.

The work includes:

- New product development with our research team.
- New applications and techniques development for cell biology products.
- Preparation of scientific texts and presentations at conferences.
- Running scientific courses and seminars.
- Providing scientists with technical assistance in new techniques.
- Market research.

Our Cell Biology Group is situated in pleasant surroundings in Uppsala, Sweden. Our laboratories are newly built and excellently equipped. The positions are challenging and present a unique career opportunity to join a young multinational team working at the forefront of this rapidly expanding area.

For additional information on the positions, the company, or just life in Sweden, please contact: Dr Mike Hirtenstein, phone: Sweden 018/16 51 25.

Letter of application and curriculum vitae should be sent in confidence to Mr Jan Gustafsson, AB Fortia, Personnel- and Organization development, Box 604, S-752 25 Uppsala.



**Pharmacia
Fine Chemicals**

POSITIONS OPEN

Postdoctoral Positions in Biochemistry. Two positions available to study metabolism of α -tocopherolquinol. (i) Research associate, grant-funded, requires only a Ph.D. (ii) Hard-money, nontenure-track position, requires at least 2 years of postdoctoral experience. Send résumé, publications list, description of research interests, and three letters of reference to: **Dr. S. B. Tove, Biochemistry Department, North Carolina State University, Raleigh, N.C. 27650. An Equal Opportunity/Affirmative Action Employer.**

A **POSTDOCTORAL POSITION** is immediately available for the immunological, biochemical, and genetic analysis of the in vitro cultured malaria parasite, *Plasmodium falciparum*. An individual with prior immunological and biochemical experience will be given preference.

Please send curriculum vitae, copies of publications, and references to:

**Dr. Joseph Inselburg
Department of Microbiology
Dartmouth Medical School
Hanover, New Hampshire 03755**

Postdoctoral Positions in DNA repair. Positions available for recent Ph.D.'s in cell biology, biochemistry, or molecular biology to study the regulation of DNA repair in normal and repair-deficient human cells. Salary negotiable. Send application with curriculum vitae and names of two references to:

**Dr. Michael A. Sirover
Fels Research Institute
Temple University School of Medicine
Philadelphia, Pa. 19140**

POSTDOCTORAL POSITION for a person with training in soil chemistry, soil physics, or soil microbiology. Position is for the study of the fate and transport of synthetic low molecular weight organics at the soil/air interface. This is a new research area being established within the interdisciplinary National Center for Intermedia Transport Research recently established at University of California, Los Angeles (UCLA), by EPA. Candidates should have strong backgrounds in experimental techniques of analytical chemistry or microbiology as related to soil processes. Available immediately. Send résumé and names, addresses, and telephone numbers of three references to: **Dr. Vincent Vilker, Department of Chemical Engineering, UCLA, Los Angeles, Calif. 90024. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS are available for a **BIOCHEMIST, BIOPHYSICIST, or MOLECULAR BIOLOGIST** to study: (i) DNA protein interaction and (ii) the regulation and mechanism of gene expression in both prokaryotic and eukaryotic cells. Applicants should send résumé and three letters of recommendation to: **Dr. C. W. Wu, Department of Pharmacology, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, N.Y. 11794. State University of New York at Stony Brook is an Equal Opportunity/Affirmative Action Employer. AK Number 169A.**

POSTDOCTORAL POSITION available immediately to study soluble protein regulators of mammalian adenylate cyclase. Research background in membrane biochemistry preferred. Salary range: \$13,000 to \$15,000 per annum. Send résumé and three letters of recommendation to: **Dr. Craig C. Malbon, Department of Pharmacological Sciences, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, N.Y. 11794. State University of New York at Stony Brook is an Equal Opportunity/Affirmative Action Employer. AK Number 178.**

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.

POSITIONS OPEN

A 2-year **POSTDOCTORAL POSITION** to investigate the structure of the ion-transport protein (Na-K) ATPase is available 1 January 1982 for an individual with a Ph.D. and experience in membrane biochemistry, protein chemistry, or enzymology. Salary: \$16,000 per year, plus fringe benefits. Please send curriculum vitae and names of three references to: **Dr. Robert A. Farley, Department of Physiology and Biophysics, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles, Calif. 90033.**

POSTDOCTORAL POSITION available 1 June 1982 to study the structure and molecular biology of acetylcholine receptors. Applicants with background in protein biochemistry and/or molecular biology preferred. Send curriculum vitae and names of three references to: **Dr. S. L. Hamilton, Department of Physiology and Biophysics, University of Texas Medical Branch, Galveston, Texas 77550. University of Texas Medical Branch is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL

A 2- or 3-year postdoctoral position is available in the Department of Anatomy and Cell Biology, University of Miami School of Medicine. The position involves studies into the cell biology and clinical significance of cell surface tubulin. Applicants should write to or telephone: **Robert W. Rubin, Department of Anatomy and Cell Biology, R124, University of Miami School of Medicine, P.O. Box 016960, Miami, Florida 33101. Telephone: 305-547-6691.**

POSTDOCTORAL POSITION available immediately to study inborn errors of metabolism in cell culture. Recent Ph.D. with background in enzymology and protein purification preferred. Starting salary: \$15,000 to \$16,000, plus benefits. Send curriculum vitae and names and addresses of three references to: **Dr. Rody P. Cox, Department of Medicine, Veteran Administration Medical Center, 10701 East Boulevard, Cleveland, Ohio 44106. Cleveland VA Medical Center/Case Western Reserve University is an Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately for research on the plasma factors regulating platelet functions in the field of thrombosis and hemostasis. Experiences in protein and/or membrane biochemistry preferred. Salary range: \$18,000 to \$22,000, depending on experience. Send curriculum vitae, statement of research background, and three names for reference to: **Eric Lian, M.D. (D26), P.O. Box 016760, Division of Hematology, University of Miami School of Medicine, Miami, Fla. 33101. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATE POSITIONS available for synthetic chemist or medicinal chemist to work on the development of active-site-directed reagents to inhibit the polymerization of hemoglobin S and on the synthesis of polynucleotides. Salary: \$15,000 to \$22,000. Send résumé to: **Dr. Joseph A. Walder, Department of Biochemistry, The University of Iowa, Iowa City, Iowa 52242. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE: 40 hours per week; \$18,240 per year salary. Investigates mechanism of enzyme denaturation (loss of catalytic activity). Analyzes activity of enzymes in various pH solutions to determine how and why the enzymes lose activity. Analyzes loss activity to determine possible prolongation of activity. Classifies loss into three categories: hydronium ion reaction (first order), hydroxide ion reaction (first order), and a cannibalistic reaction (second-order). Requires Ph.D. degree in biochemistry. Apply to: **Dr. Myron L. Bender, Professor of Chemistry and Biochemistry, Northwestern University, 2145 Sheridan Road, Evanston, Illinois 60201.**

POSTDOCTORAL RESEARCH ASSOCIATE AT BROWN UNIVERSITY. To work on an experimental study of the infrared spectroscopy of van der Waals molecules of atmospheric significance. A recent Ph.D. in physical chemistry preferred with experimental experience in one or more of the following: molecular beams, IR spectroscopy, diode lasers, apparatus/computer interfacing. Send résumé and names of three references by 1 December to: **Professor J. M. Calo, Division of Engineering, Box D, Brown University, Providence, Rhode Island 02912. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

RESEARCH ASSOCIATE position available immediately for biochemist or physical chemist, Ph.D. interested in isolation and physical characterization, including stop-flow, CD, fluorescence, EPR, RR and microcalorimetry of mitochondrial membrane proteins and their interaction with spin or photoaffinity-labeled ubiquinone and phospholipids. Salary commensurate with experience. Send résumé and names of three references to: **Dr. C. A. Yu, Department of Biochemistry, Oklahoma State University, Stillwater, Okla. 74078.**

RESEARCH ASSOCIATE position available immediately for work on cellular mechanisms of gastric acid and pepsin secretion. Candidates should have a Ph.D. in physiology or a related area and research experience in membrane transport. Salary: \$15,000 to \$17,000. Send curriculum vitae and names of three references to: **Dr. Stephen Hersey, Department of Physiology, Emory University, Atlanta, Ga. 30322. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE. Full-time research faculty position available immediately at Cincinnati, Ohio-area university. Requires Ph.D. in biochemistry or closely related field and 3 years of postdoctoral training emphasizing culture of mammalian cells and study of enzymes involved in the biosynthesis and utilization of sterols. Must be able to maintain independent research program and participate in teaching of research techniques. Salary: \$16,000 to \$17,000. Send curriculum vitae to: **Ohio Job Service, 1916 Central Parkway, Cincinnati, Ohio 45214, attention: Job Order Number 461322.**

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 FELLOW OR RESEARCH ASSOCIATE to participate in a team effort and have major responsibility for the isolation and protein sequence analysis of human antihemophilic factor. Position available immediately. Applicants must be U.S. citizens or hold permanent U.S. visas. Salary dependent upon experience. Send inquiries to: **Dr. Bernard Horowitz, Director of Blood Products, NEW YORK BLOOD CENTER, 310 East 67 Street, New York, N.Y. 10021. An Equal Opportunity Employer.**

RESEARCH POSITION

Glycopeptide-glycolipid research position at a university hospital for benchmark-oriented individual with quantitative working habits for structural characterization of carbohydrate moieties of glycoconjugates from human cell membranes. Doctorate required. Considerable freedom for this section leader within the overall goals of the department. Technical help can be hired. Starting salary range: \$28,000 to \$38,000, depending upon experience; excellent benefits; significant annual salary increases; paid attendance of meetings, including overseas. This position is not dependent on grant money and is intended to be a permanent one. Please send résumé to: **Dr. Georg F. Springer, Director, Immunochimistry Research, Evanston Hospital, 2650 Ridge Avenue, Evanston, Illinois 60201.**

Canadian Red Cross, Blood Transfusion Service, **SENIOR SCIENTIST**, Ph.D. (1981 scale: \$25,200 to \$37,200).

Basic requirements: Background in protein chemistry and/or coagulation and protein purification and characterization.

Please forward applications to: **Dr. G. Rock, Medical Director, Ottawa Centre, 85 Plymouth Street, Ottawa, Ontario, Canada K1S 3E2.**

TOXICOLOGY

Full-time position currently available for a toxicologist with special interests in reproductive toxicology and/or biochemical toxicology. Salary negotiable.

**Dr. Raymond D. Harbison
Division of Interdisciplinary Toxicology
University of Arkansas for Medical Sciences
4301 West Markham
Little Rock, Arkansas 72205
An Equal Opportunity Employer**

BIOANALYTICAL CHEMISTS

Midwest Research Institute conducts applied research spanning the breadth of the chemical, biological and life sciences; economic, social and management sciences; and energy, materials and environmental sciences.

ASSOCIATE CHEMIST

We seek a results oriented researcher to lead programs in bioanalytical chemistry. You will be responsible for leading, developing and conducting studies in the metabolism and distribution of xenobiotics. This position offers broad interface with clients and an interdisciplinary team. This challenging opportunity requires strong background in organic chemistry and analytical methods development for xenobiotics in tissues. The candidate should be familiar with radio-tracer techniques, extraction methods, and chromatographic and mass spectrometric techniques (GC, HPLC, GC/MS, MS). You must possess a Ph.D. in Organic, Analytical, Biochemistry, or related discipline or equivalent.

ASSISTANT CHEMIST

This position is responsible for conducting bioanalytical chemistry studies in support of metabolism programs and carcinogenesis bioassay studies. The successful candidate will possess an MS in Organic or Analytical Chemistry with academic or industrial experience (one or more years) in bioanalytical chemistry. Experience in GC/HPLC and spectrophotometry required.

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COLLEGE OF NATURAL SCIENCES AND MATHEMATICS UNIVERSITY OF HOUSTON CENTRAL CAMPUS

The University of Houston Central Campus invites nominations and applications for the position of Dean of the College of Natural Sciences and Mathematics. The University of Houston Central Campus is a comprehensive, state-supported, urban university which occupies a 400 acre wooded campus near downtown Houston and enrolls 30,000 undergraduate, graduate, and professional students.

The College of Natural Sciences and Mathematics offers baccalaureate, master's and doctoral degrees in Biology, Biochemical and Biophysical Sciences, Chemistry, Geology, Mathematics, and Physics. The baccalaureate and master's degrees are offered in Computer Science with state approval pending for a doctoral program. Additional baccalaureate options and sequences include systems, science, or business (Computer Science), geophysics (Geology), statistics (Mathematics), and geophysics (Physics). The College has some 4000 students (2950 undergraduate, 500 post-baccalaureate, and 550 graduate), a full-time faculty of 147, and an appropriate budget of \$6 million.

Qualifications: A record of significant scholarly or professional achievement in one of the disciplines of the college, a record of academic administrative experience and achievement at the level of department chair or higher, and the ability to provide leadership. An earned doctorate in one of the disciplines of the College is also expected.

Salary is highly competitive.

Position available: Summer 1982

Application deadline: November 20, 1981

Applications should include a complete vita and a list of from three to five references. Nominations and applications should be sent to:

Dr. Michael Bisesi
NSM Search Committee
Office of the Provost, 408 E
University of Houston Central Campus
Houston, Texas 77004

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RESEARCH ASSOCIATE. Ph.D. with knowledge of biochemistry and/or retinal morphology/histology (light and electron microscopy) to work on problems related to metabolic control in the retina.

Send résumé and three references, including telephone numbers, to:

Dr. L. Reif
Eye Research Institute of Retina Foundation
20 Stanford Street
Boston, Mass. 02114

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RESEARCH ASSOCIATE (POSTDOCTORAL) POSITION available **IMMEDIATELY** to study the regulation of gene expression in differentiating 3T3-L1 adipocyte cells. Candidate should have a strong background in molecular biology or be willing to learn mRNA purification, cDNA preparation and cloning, and so forth. Salary negotiable. Send curriculum vitae and the names of two references to: **Dr. M. S. Patel, Department of Biochemistry, Case Western Reserve University, School of Medicine, Cleveland, Ohio 44106.**

CORNELL UNIVERSITY, SYSTEMATIC BOTANIST. The L. H. Bailey Hortorium of the Division of Biological Sciences seeks applicants for a faculty position in **vascular plant systematics**, rank open, for July 1982. Applicants must have a Ph.D. with a major interest in systematic botany, familiarity with modern evolutionary theory, and a demonstrated ability to conduct effective field research. Duties will include teaching in systematic botany and a vigorous research program. Applicants should forward their curriculum vitae, a detailed statement of research interests, and the names of three references by 1 December 1981 to: **Dr. David M. Bates, L. H. Bailey Hortorium, 467 Mann Library Building, Cornell University, Ithaca, New York 14853.** *Cornell University is an Equal Opportunity/Affirmative Action Employer.*

TOXICOLOGIST

Background in genetics, biochemistry, or cell biology. Must have experience in mammalian cell mutagenesis. Work involves screening of chemicals using Ames and other short-term tests, validation of assays, and evaluation of published data. Qualified applicants should send their résumé to: **IBM Corporation, Robert Williams, General Products Division, Department 433/122, College and Professional Recruiting, 5600 Cottle Road, San Jose, Calif. 95193.** *An Equal Opportunity Employer.*

VERTEBRATE ANATOMIST. A tenure-track faculty position at the rank of assistant professor at Indiana University-Purdue University at Indianapolis is available beginning August 1982. Responsibilities include lecturing and coordinating laboratories in an undergraduate health science-oriented human anatomy course and teaching an upper-level or graduate course in the candidate's area of expertise. The successful candidate must possess a Ph.D. or equivalent degree and will be expected to maintain a productive research program. Completed applications are due by 22 November 1981. Send curriculum vitae, transcripts, and a summary of research objectives and accomplishments and request three references to forward letters of recommendation to: **Chairman, Search and Screen Committee, Department of Biology, Purdue University School of Science, 1201 East 38 Street, P.O. Box 647, Indianapolis, Indiana 46223.** *An Affirmative Action/Equal Opportunity Employer.*

VETERINARY EPIDEMIOLOGIST/MICROBIOLOGIST for research and teaching. Opportunities for advancement and tenure consideration after appropriate service. Rank is open; salary is competitive and dependent upon qualifications. Requirements: D.V.M., Ph.D. preferred with experience and training in veterinary epidemiology and microbiology. Candidates with the Ph.D. degree and appropriate experience and training will be considered. An opportunity for an industrious scientist to join a progressive interdisciplinary department. Contact: **Robert B. Wilson, Chairman, Department of Veterinary Microbiology and Pathology, Washington State University, Pullman, Wash. 99164.** *Washington State University is an Equal Opportunity/Affirmative Action Employer. In order to assist our efforts to meet Affirmative Action goals, minority, handicapped, and women candidates are encouraged to identify themselves as such in their applications.*

POSITIONS OPEN

University of California, Los Angeles (UCLA)
School of Medicine
Department of Microbiology and Immunology

Applications are solicited for a tenure-track faculty position in the area of **VIRAL IMMUNOLOGY** at the rank of **assistant professor**. Outstanding applicants possessing a doctoral degree, postdoctoral experience, and a strong commitment to developing an independent research program are sought. Applicant must be interested in studying host response to viral disease using immunological approaches. Applicant must be well trained in both conceptual and technological aspects of modern immunology, virology, and possibly molecular biology and must show a strong promise of independent research capability. Responsibilities include participation in the departmental teaching of medical, dental, and/or graduate students as well as possibly developing a graduate course in viral immunology. Please submit curriculum vitae, current research interest, list of publications, and names of references. Nominations of outstanding candidates are also welcome. *UCLA is an Equal Opportunity/Affirmative Action Employer.*

Debi P. Nayak, B.V.Sc., Ph.D.
Professor
and

Jack G. Stevens, D.V.M., Ph.D.

Professor and Chairman
Department of Microbiology and Immunology
UCLA School of Medicine
Los Angeles, Calif. 90024

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RESEARCH ASSOCIATESHIP

At the University of Toronto, a research associateship is available to help research on the mechanism of protein biosynthesis. Experience in protein biosynthesis and molecular genetics preferred. A Ph.D. and three letters of reference are required. Write:

Professor M. C. Ganoza
Banting and Best Department of Medical Research
112 College Street
Toronto, Ontario, Canada M5G 1L6

TRAINEESHIPS

POSTDOCTORAL TRAINEESHIPS IN CANCER BIOLOGY. Applications are invited for positions in the Cancer Biology Training Program of the Michigan Cancer Foundation. Initial appointment will be for a period of 1 year, renewable twice. Program provides for comprehensive and broad training of postdoctoral trainees in cancer research. Trainees are selected on their potential for future excellence and achievement in cancer research and are expected to undertake significant research projects within the disciplines represented.

APPLICATION: Submit curriculum vitae and three references to: **Cancer Biology Training Program Committee**, or to one of the following departmental chairpersons: **Samuel B. Horowitz (Biology)**, **Jerome P. Horwitz (Chemistry)**, **Charles M. King (Chemical Carcinogenesis)**, **Gloria H. Heppner (Immunology)**, **G. Marie Swanson (Social Oncology)**, or **Charles M. McGrath (Tumor Biology)**, **Michigan Cancer Foundation, 110 East Warren Avenue, Detroit, Mich. 48201.**

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PROGRAMS

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.**

PROGRAMS

CAREER TRAINING IN CANCER RESEARCH FOR M.D.'s

Funds are available from a National Cancer Institute of Canada Terry Fox Training Grant Award to Drs. H. Bush and D. Denhardt to support training in research in the London Cancer Clinic and the Cancer Research Laboratory of the University of Western Ontario. These competitively salaried positions provide an excellent opportunity for medically qualified individuals to participate in some exciting research, such as the application of recombinant DNA and hybridoma technologies to the immunology and cell biology of metastases. Candidates should send a detailed résumé, undergraduate transcript, statement of career plans, and references to: **Dr. Haydn Bush, London Cancer Clinic, Victoria Hospital, London, Ontario, Canada N6A 4G5.**

FELLOWSHIPS

CARDIOVASCULAR DEVELOPMENT

NIH postdoctoral fellowship available immediately to study the development of the atrial septum under normal and experimental conditions. Applicant should have experience in one or more of the following: developmental/cell biology, experimental embryology, histochemistry, transmission and scanning electron microscopy, and autoradiography. Contact: **Dennis E. Morse, Ph.D., Department of Anatomy, Medical College of Ohio, C. S. 10008, Toledo, Ohio 43699.** Telephone: 419-381-4128.

POSTDOCTORAL RESEARCH TRAINING FELLOWSHIP

The positions are National Research Service Award Traineeships in Tumor Biology at the University of Iowa. The program is multidisciplinary with research and training opportunities in the following areas:

- 1) Structure and regulation of expression of prokaryotic, eukaryotic, and viral genes (Professors Chalkley, Donelson Gussin, Newlon, Stinski, and Stoltzfus).
- 2) Regulation of cellular differentiation and the design of antitumor drugs (Professors Hoak, Lynch, Montgomery, Soll, and Solursh).
- 3) The biosynthesis and structure of cell surface macromolecules in normal and tumor cells (Professors Burns, Heath, Shires, and Specator).

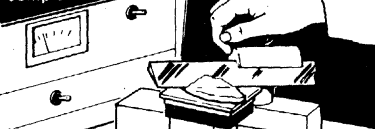
Fellowships are available immediately to U.S. citizens (or holders of immigrants visas) for a period of 1 year with the possibility of renewal up to 3 years. Stipends range from \$13,380 to \$18,787, depending on previous relevant experience. Benefits include full health insurance coverage, travel expenses, and funds for supplies and equipment. Applicants are requested to send their curriculum vitae, a brief statement of career goals, and three letters of reference to: **Edward C. Heath, Program Director, Department of Biochemistry, University of Iowa, 4-403 BSB, Iowa City, Iowa 52242.** *The University is an Equal Opportunity/Affirmative Action Employer.*

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