

settles too easily on the organism as the unit of selection, without adequate discussion of evidence to the contrary or of alternative points of view. More pluralistic attitudes (as taken, for example, by Price, Hamilton, or Wade) emphasize that selection can have simultaneous impact on several levels, with varying intensities, in a manner that depends both on the way in which genetic variation is partitioned among levels and units and on the degree of differential survival and reproduction of units on each level.

Parsons uses the framework of *r*- and *K*-selection to organize much of his discussion. As has been repeatedly pointed out in the literature, there are many problems with this scheme. Parsons clearly regards it as a provisional system and acknowledges its difficulties, but then proceeds to use it for classification because of its convenience. This creates the potential that readers will draw misleading conclusions about what causes the evolution of life-history traits. Parsons also makes repeated comparisons between predictable and unpredictable and stable and fluctuating habitats. Such dichotomies are not useful. The concrete mechanisms that mediate selection are, first, extrinsic age- and size-specific shifts in mortality rates that interact with, second, the intrinsic constraints and potentials of organisms. These are known to differ among lineages. Such interactions are complex and multidimensional, and to present them in terms of simple dichotomies seriously prejudices the analysis.

The selection of material and topics is uneven and not clearly justified. Much of the material concerns a single genus, *Drosophila*, mostly as it has been studied in Australia. The book provides a good summary of this work, much of which is important and should be drawn to the attention of a wider audience than just the *Drosophila* researchers. However, the subject matter covered is much more specialized than the title promises.

The central chapters were written uncritically; the material is not well digested. Not enough emphasis is placed on providing an overall structure that ties the chapters together and shows the reader clearly why the work discussed is important, where it fits, and what it means.

In summary, this book is a mixed bag. I suspect that a good book on the evolutionary ecology of Australian *Drosophila* has been compromised by the author's understandable desire to generalize.

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Contributions to Microscopy

History of Staining. GEORGE CLARK and FREDERICK H. KASTEN. Third edition. Williams and Wilkins, Baltimore, 1983. x, 304 pp., illus. \$29.95.

The great advances made during the second half of the 19th century in the microscopic examination of animal, plant, and microbial cells were in part a consequence of the work of organic chemists in the synthesis of artificial dyes for the textile industry. Natural coloring materials (carmines, hematoxylin) had been used by biologists before and continued to be used later, but the availability of the many new synthetic dyes produced by a burgeoning chemical industry (especially in Germany) greatly broadened the scope of stain technology. In the hands of a series of notable investigators, among them Paul Ehrlich, Walther Flemming, and Rudolph Heidenhain, these new dyes not only revealed the presence of structural elements of cells (for example, chromosomes) but also laid the cytological groundwork for the study of cell dynamics in heredity and embryonic development.

The book under review summarizes this story and brings it up to date until recent times. The first edition, prepared by Harold J. Conn (1886–1975), appeared 50 years ago; a second edition was published in 1948. This edition was begun by Ralph D. Lillie (1896–1979), and the opening chapter (34 pp.) provides a biographical memoir of Lillie, with a full list of his publications. The organization of the material in the remainder of the book follows closely that used by Conn, except for the addition of new chapters on the staining of connective and nerve tissue, on immunological staining, on fluorescence techniques, and on the histochemistry of proteins and nucleic acids, which make the new edition more than twice the size of the first.

As in the first edition, among the chapters dealing with particular staining methods are interspersed brief biographical sketches of several contributors to the field, from the 18th-century botanist John Hill to Frank B. Mallory (1862–1941). In addition biographical material about other scientists (for example, Robert Feulgen) is included in the chapters written for this edition. There is an extensive bibliography and an adequate index.

Perhaps because the authors of the third edition wished to retain material from the earlier ones, there is some looseness of organization that might have been corrected by more drastic

revision of Conn's editions. For example, the new chapter on protein and nucleic acid histochemistry contains a much better account of the development of synthetic dyes (pp. 203–217) than that presented in an earlier chapter on aniline dyes in histology. Also, in this new chapter more attention is given to the biological problems whose study was affected by advances in staining techniques.

This volume provides the most useful historical summary now available in English of the development of stain technology.

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Books Received

Algorithmic Studies in Mass Storage Systems. C. K. Wong. Computer Science Press, Rockville, Md., 1983. x, 411 pp., illus. \$32.95.

Alsos. Samuel A. Goudsmit. Introduction by R. V. Jones. Tomash, Los Angeles, 1983. xxx, 260 pp., illus. \$28. Reprint, 1947 edition.

Alternative Energy Sources for the Centralised Generation of Electricity. R. H. Taylor. Hilger, Bristol, 1983 (U.S. distributor, Heyden, Philadelphia). xvi, 310 pp., illus. \$36. Modern Energy Studies.

Ambident Anions. O. A. Reutov, I. P. Beletskaya, and A. L. Kurts. J. P. Michael, Transl. Ed. Consultants Bureau (Plenum), New York, 1983. xiv, 338 pp., illus. \$59.50. Translated from the Russian.

American Families and the Economy. The High Costs of Living. Richard R. Nelson and Felicity Skidmore, Eds. National Academy Press, Washington, D.C., 1983. x, 307 p., illus. Paper, \$18.75. From a conference.

Analysis, Design and Evaluation of Man-Machine Systems. G. Johannsen and J. E. Rijnsdorp, Eds. Published for the International Federation of Automatic Control by Pergamon, New York, 1983. xviii, 424 pp., illus. \$180. IFAC Proceedings Series. From a conference, Baden-Baden, Germany, Sept. 1982.

The Analysis of Gases by Chromatography. C. J. Cowper and A. J. DeRose, Eds. Pergamon, New York, 1983. xii, 147 pp., illus. \$25. Pergamon Series in Analytical Chemistry, vol. 7.

Behavior and the Natural Environment. Irwin Altman and Joachim F. Wohlwill, Eds. Plenum, New York, 1983. xvi, 346 pp., illus. \$35. Human Behavior and Environment, vol. 6.

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A Bibliography of Lambda-Calculi, Combinatory Logics and Related Topics. A. Rezus. Mathematisch Centrum, Amsterdam, 1983. vi, 86 pp. Paper, Dfl. 12.10.

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Biobehavioral Bases of Coronary Heart Disease. Theodore M. Dembroski, Thomas H. Schmidt, and Gerhard Blümchen, Eds. Karger, Basel, 1983. xviii, 482 pp., illus. \$95.25. Karger Biobehavioral Medicine Series 2. From a conference, Altenberg, Germany, June 1981.

The Biological Basis of Reproductive and Developmental Medicine. Joseph B. Warshaw, Ed. Elsevier, New York, 1983. xvi, 445 pp., illus. \$49.50.

Biological Health Risks of Sludge Disposal to Land in Cold Climates. P. M. Wallis and D. L. Lehmann. University of Calgary Press, Calgary, Canada, 1983. vi, 388 pp., illus. Paper, \$18. From a symposium, Calgary, Nov. 1982.

Biological Structures and Coupled Flows. Avraham Oplatka and Miriam Balaban, Eds. Academic Press, New York, and Balaban, Philadelphia, 1983. xiv, 519 pp., illus. \$60. From a symposium, Rehovot, Israel, June 1982.

(Continued on page 721)



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Literature

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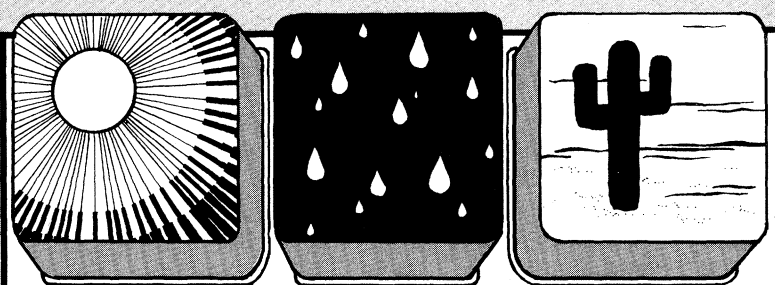
Air Quality Instrumentation contains descriptions of apparatus for monitoring and measurement. Dosimeters, samplers, meters, recorders, and kits are available. Envirotech Services. Circle 569.

Media and Supplies are cataloged for electrophoresis, isoelectric focusing, cell culture, and cloning. Catalog is organized by products and by discipline. FMC Marine Colloids Division. Circle 570.

Biotechnology Instruments makes available products such as DNA sequencers, transilluminators, autoradiographic film, and apparatus and power supplies. Fotodyne. Circle 577.

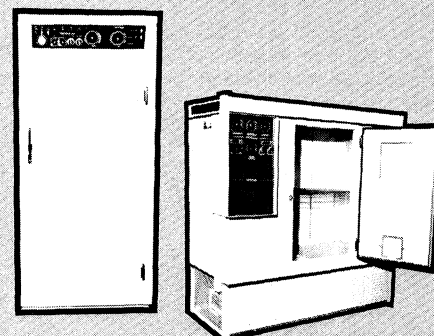
Freezers provides design specifications, temperature ranges, optional equipment, and general descriptions of three models in the Bio-Cool line. FTS Systems. Circle 578.

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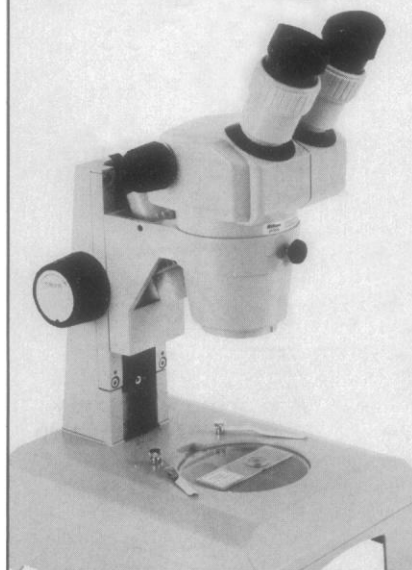
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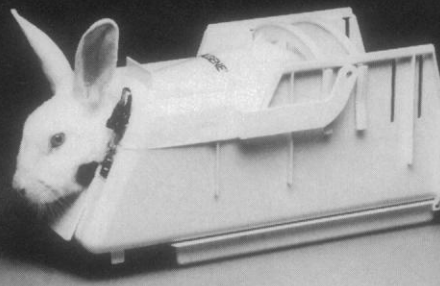


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BOOKS RECEIVED

(Continued from page 694)

- Biomagnetism.** An Interdisciplinary Approach. Samuel J. Williamson *et al.*, Eds. Plenum, New York, 1983. xx, 706 pp., illus. \$95. NATO Advanced Science Institutes Series A, vol. 66. From an institute, Grottaferrata, Italy, Sept. 1982.
- Biomass Utilization.** Wilfred A. Côté, Ed. Plenum, New York, 1983. xii, 730 pp., illus. \$95. NATO Advanced Science Institutes Series A, vol. 67. From an institute, Alcubideche, Portugal, Sept. 1982.
- A Biomechanical and Morphological Analysis of Human Hand Joints.** Jürgen Koebke. Springer-Verlag, New York, 1983. vi, 85 pp., illus. Paper, \$23. Advances in Anatomy, Embryology and Cell Biology, vol. 80.
- Biomedical Ethics Reviews, 1983.** James M. Humber and Robert F. Almeder, Eds. Humana, Clifton, N.J., 1983. xii, 209 pp. \$24.50.
- Biophysical Plant Physiology and Ecology.** Park S. Nobel. Freeman, San Francisco, 1983. xvi, 608 pp., illus. \$34.95.
- Black and White Identity Formation.** Stuart T. Hauser and Eydie Kasendorf. 2nd ed. Krieger, Malabar, Fla., 1983. xvi, 236 pp., illus. Paper, \$7.50.
- Climate and World Order.** An Inquiry into the Natural Cause of Underdevelopment. Jayantanuja Bandyopadhyaya. Humanities Press, Atlantic Highlands, N.J., 1983. x, 178 pp. \$12.75.
- Coastal Upwelling.** Its Sediment Record. Erwin Sues and Jörn Thiede, Eds. Plenum, New York, 1983. Two volumes. Part A, Responses of the Sedimentary Regime to Present Coastal Upwelling. xvi, 604 pp., illus. \$85. Part B, Sedimentary Records of Ancient Coastal Upwelling. xvi, 610 pp., illus. \$85. NATO Conference Series IV, vol. 10. From an institute, Vilamoura, Portugal, Sept. 1981.
- Coated Grains.** Tadeusz M. Peryt, Ed. Springer-Verlag, New York, 1983. xiv, 655 pp., illus. \$58.
- Codex Seraphinianus.** Abbeville Press, New York, 1983. Unpagged, illus. \$75.
- Cognitive Strategy Research.** Educational Applications. Michael Pressley and Joel R. Levin, Eds. Springer-Verlag, New York, 1983. xiv, 306 pp., illus. \$31. Springer Series in Cognitive Development.
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- Cohesive Properties of Semiconductors under Laser Irradiation.** Lucien D. Laude, Ed. Nijhoff, The Hague, 1983 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xx, 614 pp., illus. \$87. NATO ASI Series E, No. 69. From an institute, Corsica, July 1982.
- Computer Aided Design.** Fundamentals and System Architectures. J. Encarnação and E. G. Schlechtendahl. Springer-Verlag, New York, 1983. x, 346 pp., illus. \$29.50. Symbolic Computation.
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- Concept Development and the Development of Word Meaning.** Th. B. Seiler and W. Wannenmacher, Eds. Springer-Verlag, New York, 1983. xii, 348 pp. \$23.50. Springer Series in Language and Communication, vol. 12. Based on a meeting, Darmstadt, April 1982.
- Contemporary Geriatric Medicine.** Vol. 1. Steven R. Gambert, Ed. Plenum, New York, 1983. xxiv, 412 pp., illus. \$49.50.
- Continental Radioecology.** Soil and Freshwater Ecosystems. N. V. Kulikov and I. V. Molchanova. S. S. Shvarts, Ed. Plenum, New York, and Nauka, Moscow, 1982. 175 pp., illus. Paper, \$29.50. Translated from the Russian edition (Moscow).
- Differential Diagnosis of Internal Diseases.** A. V. Vinogradov. Mir, Moscow, 1982 (U.S. distributor, Imported Publications, Chicago). Two volumes. 800 pp. \$20.95. Translated from the Russian edition (Moscow, 1980) by Ludmila Aksenova and Arthur Aksenov.
- Disease and Its Control.** The Shaping of Modern Thought. Robert P. Hudson. Greenwood, Westport, Conn., 1983. xviii, 259 pp. \$29.95. Contributions in Medical History, No. 12.
- The Doomsday Book of Animals.** David Day. Illustrated by Tim Bramfitt *et al.* Viking, New York, 1983. 288 pp. Paper, \$14.95. A Studio Book.
- Double-Stranded RNA Viruses.** Richard W. Compans and David H. L. Bishop, Eds. Elsevier, New York, 1983. xx, 505 pp., illus. \$90. From a symposium, St. Thomas, U.S. Virgin Islands, Oct. 1983.
- Echinoderm Studies.** Vol. 1. Michel Jangoux and John M. Lawrence, Eds. Balkema, Rotterdam, 1983 (U.S. distributor, MBS, Salem, N.H.). viii, 204 pp., illus. \$25.
- Elastic Media with Microstructure II.** Three-dimensional Models. Isaak A. Kunin. Springer-Verlag, New York, 1983. viii, 272 pp. \$39.50. Springer Series in Solid-State Sciences, vol. 44. Translated from the Russian edition (Moscow, 1975).
- High and Low Erucic Acid Rapeseed Oils.** Production, Usage, Chemistry, and Toxicological Evaluation. John K. G. Kramer, Frank D. Sauer, and Wallace J. Pigden, Eds. Academic Press, New York, 1983. xx, 582 pp., illus. \$79.50.
- High-Performance Liquid Chromatography of Proteins and Peptides.** Milton T. W. Hearn, Fred E. Regnier, and C. Timothy Wehr, Eds. Academic Press, New York, 1983. xvi, 267 pp., illus. \$27.50. From a symposium, Washington, D.C., Nov. 1981.
- Home Denied.** Abstract of a Single U.S. Divorce. Roger O. Tedor. Vantage, New York, 1983. xiv, 221 pp. \$10.95.
- The Human Body.** Jonathan Miller. Three-dimensional, movable illustrations designed by David Pelham. Viking, New York, 1983. Unpagged. \$16.95.
- The Human Mind.** A Physiological Clarification. Edmund Jacobson. Thomas, Springfield, Ill., 1982. xiv, 135 pp., illus. \$18.75.
- Human Motivation.** Commentary on Goal-Directed Action. Nathan Brody. Academic Press, New York, 1983. xii, 231 pp., illus. \$25.
- IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans.** Vol. 30. Miscellaneous Pesticides. International Agency for Research on Cancer, Lyon, 1983 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). 427 pp., illus. Paper, \$30.
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- Individual Differences in Cognition.** Vol. 1. Ronna F. Dillon and Ronald R. Schmeck, Eds. Academic Press, New York, 1983. xvi, 323 pp. \$34.
- Instrumentation for Environmental Monitoring.** Lawrence Berkeley Laboratory Environmental Instrumentation Survey. Vol. 1, Radiation. Robert J. Budnitz *et al.* Wiley-Interscience, New York, 1983. xxii, 1130 pp., illus. \$150.
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- Intestinal Transport.** Fundamental and Comparative Aspects. M. Gilles-Baillien and R. Gilles, Eds. Springer-Verlag, New York, 1983. xii, 375 pp., illus. \$42.50. Proceedings in Life Sciences. From a conference, Bielefeld, Sept. 1982.
- Intracontinental Fold Belts.** Case Studies in the Variscan Belt of Europe and the Damara Belt in Namibia. H. Martin and F. W. Eder, Eds. Springer-Verlag, New York, 1983. xiv, 945 pp., illus. \$52.
- Introduction to General Topology.** K. D. Joshi. Halsted (Wiley), New York, 1983. xii, 412 pp. \$19.95.
- Making Science Laboratory Equipment.** A Manual for Students and Teachers in Developing Countries. Xavier F. Carelse. Wiley, New York, 1983. xiv, 273 pp., illus. \$18.95.
- Medical and Social Aspects of Alcohol Abuse.** Boris Tabakoff, Patricia B. Sutker, and Carrie L. Randall, Eds. Plenum, New York, 1983. xvi, 403 pp. \$39.50.
- Memory in Animals and Humans.** Some Comparisons and Their Theoretical Implications. Andrew Mayes, Ed. Van Nostrand Reinhold, New York, 1983. viii, 338 pp. \$45. Comparative Psychology of Animals and Humans.
- Methods in Enzymology.** Sidney P. Colowick and Nathan O. Kaplan, Eds. Vol. 94, Polyamines. Herbert Tabor and Celia White Tabor, Eds. Academic Press, New York, 1983. xxxii, 497 pp., illus. \$55. Vol. 100, Recombinant DNA, Part B. Ray Wu, Lawrence Grossman, and Kivie Moldave, Eds. Academic Press, New York, 1983. xxvi, 540 pp., illus. \$69.50.
- Nutrition and the Brain.** Vol. 6, Physiological and Behavioral Effects of Food Constituents. Richard J. Wurtman and Judith J. Wurtman, Eds. Raven, New York, 1983. x, 281 pp. \$45.
- Nutrition in Hematology.** John Lindenbaum, Ed. Churchill Livingstone, New York, 1983. x, 326 pp., illus. \$37.50. Contemporary Issues in Clinical Nutrition, vol. 5.
- Nutrition Intervention Strategies in National Development.** Barbara A. Underwood, Ed. Academic Press, New York, 1983. xxviii, 419 pp., illus. \$58. Nutrition Foundation Monograph Series.
- Nutrition Update.** Vol. 1. Jean Weininger and George M. Briggs, Eds. Wiley-Interscience, New York, 1983. xiv, 386 pp., illus. \$32.50.

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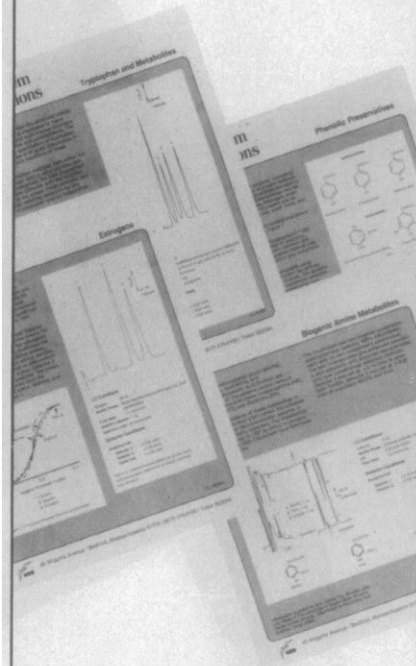
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Ophiolitic and Related Mélanges. G. J. H. McCall, Ed. Hutchinson Ross, Stroudsburg, Pa., 1983 (distributor, Van Nostrand Reinhold, New York). xvi, 446 pp., illus. \$56. Benchmark Papers in Geology, vol. 66.

Optical Radiation Measurements. Vol. 4, Physical Detectors of Optical Radiation. W. Budde. Academic Press, New York, 1983. xii, 336 pp., illus. \$49.50.

Optical Waveguide Sciences. Huang Hung-chia and Allan W. Snyder, Eds. Nijhoff, The Hague, 1983 (U.S. distributor, Kluwer Boston, Hingham, Mass.). 360 pp., illus. \$49.50. From a symposium, Kweilin, China, June 1983.

Optimal Seismic Deconvolution. An Estimation-Based Approach. Jerry M. Mendel. Academic Press, New York, 1983. xiv, 254 pp., illus. \$37.50.

Optimization and Nonsmooth Analysis. Frank H. Clarke. Wiley-Interscience, New York, 1983. xvi, 308 pp. \$34.95. Canadian Mathematical Society Series of Monographs and Advanced Texts.

Optimization Methods in Operations Research and Systems Analysis. K. V. Mital. 2nd ed. Halsted (Wiley), New York, 1983. xvi, 328 pp., illus. \$17.95.

Optimization over Time. Dynamic Programming and Stochastic Control. Vol. 2. Peter Whittle. Wiley, New York, 1983. x, 317 pp. \$44.95. Wiley Series in Probability and Mathematical Statistics.

Polycyclic Groups. Daniel Segal. Cambridge University Press, New York, 1983. xiv, 289 pp. \$49.50. Cambridge Tracts in Mathematics, 82.

Polyploidy. R. C. Jackson and Donald P. Hauber, Eds. Hutchinson Ross, Stroudsburg, Pa., 1983 (distributor, Van Nostrand Reinhold, New York). xvi, 379 pp., illus. \$38. Benchmark Papers in Genetics, vol. 12.

Potato Diseases. Avery E. Rich. Academic Press, New York, 1983. xiv, 238 pp., illus. \$35.

Preliminary Directory of Living Plant Collections of North America. Charles A. Huckins, Ed. American Association of Botanical Gardens and Arboreta, Swarthmore, Pa., 1983. vi, 73 pp. Spiral bound, \$16.

Proceedings of the Fifth Tihany Symposium on Radiation Chemistry. (Siofok, Hungary, Sept. 1982.) János Dobó, Péter Hedvig, and Róbert Schiller, Eds. Akadémiai Kiadó, Budapest, 1983. Two volumes. xxxvi, 1142 pp., illus. \$75.

Productivity and the Quality of Work Life in Hospitals. Addison C. Bennett. American Hospital Association, Chicago, 1983. x, 87 pp. Paper, \$30; to members, \$24. AHA No. 088220.

Profits and Professions. Essays in Business and Professional Ethics. Wade L. Robison, Michael S. Pritchard, and Joseph Ellin, Eds. Humana, Clifton, N.J., 1983. xii, 331 pp. \$29. Contemporary Issues in Biomedicine, Ethics, and Society.

Programming for Software Sharing. D. T. Muxworthy, Ed. Reidel, Boston, 1983 (distributor, Kluwer Boston, Hingham, Mass.). x, 283 pp. \$39.50. Ispra Courses on Information Science.

Progress in Cancer Control IV. Research in the Cancer Center. Curtis Mettlin and Gerald P. Murphy, Eds. Liss, New York, 1983. xx, 522 pp., illus. \$66. Progress in Clinical and Biological Research, vol. 130. From a meeting, Bethesda, Md., Jan. 1983.

Prosody. Models and Measurements. A. Cutler and D. R. Ladd, Eds. Springer-Verlag, New York, 1983. xii, 159 pp., illus. \$24. Springer Series in Language and Communication, vol. 14. From a workshop, Paris, Apr. 1982.

Psychology and Medical Care. G. Kent and M. Dalglish. Van Nostrand Reinhold, New York, 1983. xii, 356 pp., illus. \$39.95.

Psychology's Crisis of Disunity. Philosophy and Method for a Unified Science. Arthur W. Staats. Praeger, New York, 1983. x, 392 pp. \$39.95.

q-Hypergeometric Functions and Applications. Harold Exton. Horwood, Chichester, England, and Halsted (Wiley), New York, 1983. 347 pp. \$49.95. Ellis Horwood Series in Mathematics and Its Applications.

Selye's Guide to Stress Research. Vol. 2. Hans Selye, Ed. Scientific and Academic Editions (Van Nostrand Reinhold), New York, 1983. x, 449 pp., illus. \$32.50.

Social and Cognitive Skills. Sex Roles and Children's Play. Marsha B. Liss, Ed. Academic Press, New York, 1983. xiv, 273 pp. \$27.50. Developmental Psychology Series. Based on a symposium, 1978.

Spectacular Vernacular. A New Appreciation of Traditional Desert Architecture. Jean-Louis Bourgeois. Photographs by Carolee Pelos. Gibbs M. Smith/Peregrine Smith Books, Salt Lake City, 1983. x, 110 pp. Paper, \$14.95.

Statistics in the Labor Market. The Role in Planning and Policy Formulation. Dennis Trewin, Ed. Dekker, New York, 1983. x, 163 pp., illus. Paper, \$29.75. Lecture Notes in Statistics, vol. 5. From a symposium, Canberra.

Yeast Genetics. Fundamental and Applied Aspects. J. F. T. Spencer, Dorothy M. Spencer, and A. R. W. Smith, Eds. Springer-Verlag, New York, 1983. xxiv, 533 pp., illus. \$56. Springer Series in Molecular Biology.

Personnel Placement

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Cardio-Thoracic Surgeon: inactive for 12 years; mature; wishes academic position. Box 40, SCIENCE. X

Cell Biologist/Electron Microscopist. Ph.D. seeks tenure-track, assistant professorship in medical school or academia. Publications on structure and function in: cell motility, phagocytosis/inflammation, hormone secretion/diabetes. Extensive "hands-on" research experience in biochemistry, immunology (ELISA; RIA), and light and electron microscopy. Can research, teach, train, and supervise. Box 39, SCIENCE. X

Ecologist/Zoologist. Ph.D. Excellent instructor seeks teaching and/or research position in field-related topics, especially herpetology and limnology. Post-doctoral experience and excellent references. Available March 1984. Box 42, SCIENCE. X

Electron Microscope Technician. Also small-animal surgery, histochemistry. B.S.; extensive training with 6 years of experience in biological science; publications. Desires industrial position; any location considered. Box 41, SCIENCE. X

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Environmental Chemist. Strong agroanalytical background. Pesticide residue analysis. Adsorption and leachate study of farm wastes. Postdoctoral experience. Ph.D. (agronomy) and M.S. (chemistry). Box 339, SCIENCE. 2/17; 3/2

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Ph.D.: Former NSF and NIH administrator wants to teach vertebrate anatomy. Box 44, SCIENCE. 2/17, 24; 3/2, 9, 16

Ph.D. Psychology. University of Lancaster, England. Research interests in construct psychology, personality and psychometrics, genetic factors in personality, dreams and sleep research, and the unconscious and its phenomena. Skilled in multivariate statistics (regression, factor analysis, Bayesian approaches), computer programming (Fortran, Algol, Basic, Nova DG Assembler, IBM 370 Assembler), design of physiological monitoring instrumentation and computer interfaces, and psychological test construction. Published in *British Journal of Psychology*, *Psychometrika*, and *Multivariate Behavioural Research*. Book proposal currently in review by Oxford University Press. Seeks university research post or position in research institute. Excellent references. Box 25, SCIENCE. 2/17, 24; 3/2, 9

Troubleshooter-Consultant-Technical Expert. Ph.D. 1976. Biochemistry. Experienced in enzyme purification-characterization, cell biology, immunochemistry. Can help with protein purification, enzymes, analytical assay development, antibody (monoclonal, polyclonal) production, immunoassays. Available for jobs needing few months or hours. For long assignments, San Diego or Houston areas preferred. Box 43, SCIENCE. X

POSITIONS OPEN

ADJUNCT ASSISTANT PROFESSOR/ ASSISTANT RESEARCH PHYSIOLOGIST POSITION

Departments of Medicine and Physiology, University of California, Los Angeles (UCLA), require Ph.D. with special expertise and interest in the biochemistry/biophysics of membrane phospholipids. Position is in the Cardiovascular Research Laboratory where emphasis is placed on investigation of basic myocardial function. Title based on previous experience. Applicants should send curriculum vitae, including names of those who may be contacted for reference, to: **Dr. G. A. Langer, Cardiovascular Laboratory, UCLA, A3-375, Center for the Health Sciences, Los Angeles, Calif. 90024.**

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DALHOUSIE UNIVERSITY, DEPARTMENT OF ANATOMY. Applications are invited from persons with M.D., D.D.S., or Ph.D. degrees for the position of associate professor or professor which will be available after 1 July 1984. Applicants should be able to organize and teach courses in gross anatomy to medical and/or dental students. Experience in teaching histology and embryology or neuroanatomy is also desirable. An established research programme is required. Salary and rank commensurate with qualifications and experience. *In accordance with Canadian immigration regulations, priority will be given to Canadian citizens and permanent residents of Canada.* Applicants should forward a copy of their curriculum vitae and arrange to have three references forwarded directly to: **Dr. D. G. Gwyn, Professor and Head, Department of Anatomy, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H7.** Application deadline is 31 March 1984.

ANATOMIST

ASSISTANT PROFESSOR—Tenure-track, primary teaching in gross anatomy; secondary involvement in neuroanatomy/embryology. Research area open. Ph.D. required; postdoctoral experience preferred. Send curriculum vitae to: **Chairman, Department of Anatomy, University of New England College of Osteopathic Medicine, 11 Hills Beach Road, Biddeford, Maine 04005.**

POSITIONS OPEN

AGRICULTURAL DRAINAGE. Assistant, associate, or full professor, joint tenure-track faculty position in the Departments of Land, Air and Water Resources and Agricultural Engineering. Qualifications are a doctorate in soil and water engineering, soil physics, or related field. At least one degree in engineering desired. Applicants must have strong background in water flow and solute reactivity in porous media, mathematical and computer simulation modeling, and course work and/or experience in engineering design and evaluation of agricultural drainage systems.

Teaching includes two undergraduate courses: a background course in water and solute transport and descriptive treatment of drainage systems and a course in design and evaluation of drainage systems. Additional teaching duties include advising of undergraduate and graduate students. The appointee, after the research program is established, will be expected to offer a graduate course in that research area. Research involves study of processes in the management of soil salinity and shallow ground water, including irrigated croplands.

Applicants should submit curriculum vitae, transcripts, statement of research and teaching interests and background in each, copies of publications and manuscripts, abstract of dissertation, and the names and addresses of at least three references to: **Professor D. R. Nielsen, Chair, Search Committee, Department of Land, Air and Water Resources, 121 Veiher Hall, University of California, Davis, California 95616,** by 30 March 1984. Position is available immediately.

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ANALYTICAL/ENVIRONMENTAL CHEMIST. The Department of Chemistry, University of Maryland, seeks candidates for a tenure-track faculty position (at any level) opening January 1985. Candidates should have demonstrated ability to conduct independent research involving field collection of environmental samples and high-quality analysis and interpretation. Preference given for experience in atmospheric chemistry and nuclear analyses, but other fields will be considered. Send curriculum vitae with names of three references and application letter to: **Professor G. E. Gordon, Department of Chemistry, University of Maryland, College Park, Md. 20742.** Deadline: 15 April 1984. *The University of Maryland is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT CLINICAL PROFESSOR. The Department of Pathology, University of California San Francisco, is seeking a Board-certified anatomic pathologist with an interest in fine needle aspiration and gynecological pathology. Evidence of scholarly activity is desired. Salary commensurate with experience. Direct inquiries to: **Edward A. Smuckler, M.D., Ph.D., Chairman, Department of Pathology, University of California, San Francisco, Calif. 94143.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT OR ASSOCIATE PROFESSOR IN THE RESEARCH ASSOCIATE TRACK to assume major responsibility in a cellular electrophysiology laboratory studying arrhythmogenesis and the actions of antiarrhythmic drugs. Experience in voltage clamping, cable analysis, ion-sensitive microelectrodes, and computer programming preferable. Excellent scientific environment. Renewable term appointment with full fringe benefits. Immediate availability. Please send curriculum vitae, representative reprints, and names of three references to: **Morton F. Arnsdorf, M.D., Chief, Section of Cardiology, University of Chicago Hospitals, Box 423, 950 East 59 Street, Chicago, Ill. 60637.**

ASSISTANT PROFESSOR

Applicants must hold Ph.D., preferably in biochemistry, and have postdoctoral training. Research expertise in **MOLECULAR IMMUNOLOGY** is preferred so that applicant's work will complement ongoing research in immunoregulation. The ability to develop a research program and to acquire extramural funding is required. The successful applicant must be qualified to effectively teach biochemical subjects outside own area of research to both medical and graduate students. This 12-month tenure-track position will be filled on 1 July 1984. Send curriculum vitae, brief summary of present and proposed research programs, and names of three people who may be contacted for reference to: **Dr. F. P. Inman, Department of Biochemistry, P.O. Box 19930A, College of Medicine, East Tennessee State University, Johnson City, Tenn. 37614.** *An Affirmative Action/Equal Opportunity Employer.*

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Interested, qualified candidates should forward resume and salary requirements in confidence to: **Ms. M. Wolin, Human Resources Representative, Dept. #0384, WARNER-LAMBERT/PARKE-DAVIS, 2800 Plymouth Road, Ann Arbor, Michigan 48105.** An Equal Opportunity Employer M/F/H.

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MOLECULAR BIOLOGISTS

The Upjohn Company's Molecular Biology Research department has several openings for Bachelor's and Master's level molecular biologists. The Molecular Biology department is part of Upjohn's Biotechnology group which has the dual responsibility of performing state-of-the-art research on gene expression and in making recombinant DNA technology available to research programs throughout the company. These positions involve responsibility for participation in designing, executing, and interpreting experiments, and require research experience with a demonstrated ability to work independently. Specifically, immediate openings exist to work in the following areas:

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- Expression of cloned genes in *Bacillus subtilis*
- Expression of cloned genes in yeast

All of these positions require a Bachelor's or Master's degree in Biochemistry, Microbiology, or related field, and research experience using recombinant DNA techniques. Preference will be given to individuals with direct experience in one of the above areas, but persons with a strong background in related fields of Molecular Biology are encouraged to apply.

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POSITIONS OPEN

ASSISTANT PROFESSOR—Applicants are invited to apply for an assistant professor position in a Department of Biochemistry. Individuals with an M.D. or Ph.D. and at least 2 years of postdoctoral experience are eligible. Candidates must have: (i) demonstrated experience and publications on the isolation, chemistry, and function of peptide transforming growth factors and their membrane receptor proteins; (ii) demonstrated expertise in identifying and characterizing cellular hormone receptors, with evidence of significant original research in hormone receptor systems, and (iii) experience in the use of state-of-the-art instrumentation in microsequencing of proteins. The successful candidate will be expected to establish and direct an externally funded independent research program on transforming growth factors secreted by oncogenically transformed cells. Salary: \$28,000. Send curriculum vitae, outline of research interests, and the names of three referees by 20 March 1984 to: **Search Committee, Department of Biochemistry, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605.**

The Department of Surgery, **MEDICAL COLLEGE OF OHIO AT TOLEDO**, invites applications from Ph.D.'s and M.D.'s for the position of **ASSISTANT PROFESSOR**. Applicants must have the equivalent of 2 years of postdoctoral experience, an interest in basic research related to the stressed patient, and the potential for establishing a vigorous independent research program. The successful candidate is expected to collaborate on current sepsis and trauma work and to complement the interests of the department. Applicants should submit curriculum vitae, bibliography, short statement of future research directions, and three references to: **R. H. Birkhahn, Ph.D., Department of Surgery, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699**, by 1 April 1984. *Medical College of Ohio is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR EXPERIMENTAL PATHOLOGY

The newly reorganized and expanding Department of Pathology at Brown University is seeking a basic scientist for a tenure-track position in experimental pathology. An M.D., D.V.M. and/or Ph.D. degree and a minimum of 2 years of postdoctoral research training in environmental pathology or toxicology are required. The successful candidate is expected to participate in the teaching of experimental pathology or toxicology to undergraduate and graduate students and to develop an independent research program, supported by external funds, in an area of experimental pathology with emphasis on carcinogenesis, biochemical toxicology, or environmental sciences.

Please send curriculum vitae, a description of research plans and career objectives, and the names of three references to: **Dr. Nelson Fausto, Chairperson, Department of Pathology, Division of Biology and Medicine, Brown University, Providence, R.I. 02912.** We encourage applications from women and minority candidates. *Brown University is an Equal Opportunity/Affirmative Action Employer.* Deadline for applications: 15 April 1984.

The University of Michigan Medical School, Department of Pediatrics, offers a 3-year, term faculty appointment at the **ASSISTANT PROFESSOR** academic level available 1 July 1984. Responsibilities include patient care, teaching of house officers and medical students, and basic research in the field of hematology/oncology. Board-eligible/Board-certified applicants may inquire to: **Robert P. Kelch, M.D., Chairman, Department of Pediatrics, University of Michigan, Ann Arbor, Mich. 48109.** *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.* Code 900TP.

ASSISTANT PROFESSOR OF PHYSIOLOGY

A tenure-track position at the rank of assistant professor is available in the Department of Physiology and Biophysics of the University of Tennessee Center for the Health Sciences. Candidates should have a Ph.D. or M.D. degree, a minimum of 2 years of postdoctoral training, and a **strong research background in organ system or whole animal physiology.** Demonstrated ability to initiate a strong independent research program and to engage in the teaching activities of the department are expected. Send curriculum vitae, a brief statement of research interests, and the names of three references to: **Dr. Leonard Share, Chairman, Department of Physiology and Biophysics, University of Tennessee Center for the Health Sciences, Memphis, Tennessee 38163.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR—TENURE TRACK—ANATOMY—University of Missouri-Kansas City (UMKC) has position available for summer 1984. Requires completion of doctoral degree and post-doctoral experience. Teaching in gross and perhaps neuroanatomy; research area open. Successful candidate will have good chance of early external funding. Curriculum vitae and names of two references to: **Dr. David Moffatt, Professor and Chairman, Department of Anatomy, UMKC School of Medicine, 2411 Holmes, Kansas City, Mo. 64108**, by 1 April 1984. *Equal Opportunity Employer; women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR IN MICROBIOLOGY

The Department of Bacteriology and Public Health seeks applicants for a tenure-track position at the assistant professor level. Preference will be given to applicants with expertise in the area of microbial pathogenesis with emphasis on host/pathogen interactions. Applicants must have postdoctoral training. The successful candidate is expected to participate in graduate and undergraduate teaching and establish an active research program. Applicants should submit curriculum vitae, statement of research interests and professional objectives, and names of three references to: **Dr. David J. Hinrichs, Chairman of Search Committee, Bacteriology and Public Health, Washington State University, Pullman, Wash. 99164-4340**. Review of applications will begin 1 May 1984. *Washington State University is an Equal Opportunity Employer.*

UNIVERSITY OF PENNSYLVANIA DEPARTMENT OF MEDICINE

The Cardiovascular-Pulmonary Division has a position for an **ASSISTANT PROFESSOR OF MEDICINE** who is Board-qualified or -certified in pulmonary medicine with research experience in pulmonary hemodynamics. Research will be conducted both on animals and on man in the regulation of the pulmonary circulation. Background of clinical experience in chest medicine and research experience on the lungs and pulmonary circulation are essential.

Available 1 July 1984. Salary commensurate with experience. *University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer, M/F.*

Send reply to: **Michael McNicholas, Cardiovascular-Pulmonary Division, Department of Medicine, Hospital of the University of Pennsylvania, 874 Maloney Building, 3600 Spruce Street, Philadelphia, Pa. 19104.**

ASSISTANT OR ASSOCIATE PROFESSOR OF VIROLOGY

Candidates are sought for one or more tenure-track positions in the Center for Cancer Research and the Biology Department, Massachusetts Institute of Technology (MIT). The candidates' research interests should be in molecular aspects of tumor virology and allied areas, including oncogenes, mechanisms of cellular transformation, and expression and regulation of viral and cellular genes.

The appointees will be expected to conduct an active research program and to participate in the teaching activities of the department, particularly in lecture and laboratory teaching of molecular biology and virology.

Candidates should send curriculum vitae, a brief summary of their proposed research program, and the names of at least three scientists who can provide an evaluation of their accomplishments and future potential.

Please send applications to:

**S. E. Luria, M.D.
Director, Center for Cancer Research
MIT
Cambridge, Mass. 02139**

SAN ANTONIO, TEXAS—Associate Dean for Research and Advanced Education, The University of Texas Health Science Center at San Antonio Dental School. Academician and scientist to fill position in an innovative and expanding dental school. Responsibilities include organization and supervision of an active schoolwide research program and coordination and administration of dental school postdoctoral programs. The position also offers an opportunity to develop independent research activities. D.D.S. or D.M.D. and advanced degree preferred. Send curriculum vitae to: **Dr. Richard Carr, Dental Dean's Office, 7703 Floyd Curl Drive, San Antonio, Texas 78284**. *The University of Texas Health Science Center is an Equal Opportunity/Affirmative Action Employer.*

FELLOWS IN ACCELERATOR TECHNOLOGY

Brookhaven National Laboratory

Applications are invited from individuals with a PhD degree and/or major training in the physical sciences or engineering who wish to launch careers in accelerator design and development.

Successful candidates will be appointed Fellows in Accelerator Technology in the Accelerator Department for a period of one year, renewable for a second year. Fellows are expected to select their investigations from among the general objectives of the accelerator physics program at Brookhaven National Laboratory.

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**Dr. Derek I. Lowenstein
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- determination of sites within chromatin which are critical for alkylating agent cytotoxicity.
- identification of anticancer agents that have specificity for neoplastic tissue.

Candidates are required to have a Ph.D. in Biochemistry and/or Biochemical Pharmacology with 0-3 years post doctoral experience.

Preference will be given to candidates having a strong background in biochemistry/biochemical pharmacology and relevant publications in major scientific journals.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your CV and names of three references to: **Mr. Walter B. Flagg, SMITHKLINE BECKMAN CORPORATION, 1594 Spring Garden Street, Philadelphia, 19101**. We are an equal opportunity employer, M/F/H/V.

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POSITIONS OPEN

ASSISTANT PROFESSOR PLANT MOLECULAR BIOLOGY

The Department of Botany at Miami University is seeking applicants for a tenure-track position beginning 22 August 1984. Candidates must have a Ph.D. degree; postdoctoral research experience is desirable. The successful candidate will be expected to develop an active research program in plant molecular biology/biotechnology and to participate in undergraduate and graduate teaching. Applicants should submit curriculum vitae, transcripts, and a statement of research interests, and should arrange to have three letters of recommendation sent to: **Professor Karl Mattox, Department of Botany, Miami University, Oxford, Ohio 45056.** Deadline for applications is 26 March 1984. Position contingent upon final budgetary approval. *Miami University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT RESEARCH SCIENTIST. Recent Ph.D. in biochemistry or related area with experience in protein purification, enzymology, and/or receptor binding studies. Position involves research into the biochemical mechanism of tumor promotion and the role of protein kinases in the action of phorbol ester.

ASSISTANT RESEARCH SCIENTIST for Dr. Arnold Stern, Department of Pharmacology. Recent Ph.D. in biochemistry or related area to do research in oxygen metabolism and toxicity in red cells. Prefer background in cellular biochemistry.

Send résumé and references, indicating position of interest, to: **Miriam Kerans, Recruitment Coordinator, Personnel Department, New York University Medical Center, 560 First Avenue, New York, N.Y. 10016.** An Affirmative Action/Equal Opportunity Employer, M/F.

ASSOCIATE/ASSISTANT PROFESSOR OF MICROBIOLOGY. This position with tenure/on tenure track is available 1 June 1984. Candidates should have an M.D., Ph.D., D.D.S., or an equivalent degree. Preference will be given to applicants with teaching experience and an established research program in molecular immunology; however, candidates with expertise in related fields also will be considered. Interested persons should send curriculum vitae, brief description of research interests, and the names and telephone numbers of three individuals from whom recommendations may be obtained to: **Dr. C. John Abeyounis, Department of Microbiology, School of Medicine, State University of New York at Buffalo, 203 Sherman Hall, Buffalo, N.Y. 14214.** The University is an Equal Opportunity/Affirmative Action Employer. No person in whatever relations with the University will be subject to discrimination on the basis of age, color, national origin, race, religion, sex, or handicap.

BIOCHEMISTRY FACULTY POSITION

ASSISTANT PROFESSOR. Tenure-track position available 1 July 1984 with appointment to 30 June 1986. Hamilton College, Biology Department, seeks a biochemist to teach microbiology as well as general biochemistry. Candidate sought preferably with postdoctoral as well as teaching experience and a demonstrated research accomplishment in some area of cell biology. Applicants should have a strong interest in undergraduate education and expect to maintain an active research program that will involve undergraduates. Applications should be received by 2 March and include curriculum vitae, transcripts, and the names of three references. Send résumé to: **Professor E. C. Putala, Chairman, Biology Department, Hamilton College, Clinton, New York 13323.**

Hamilton College is an Equal Opportunity Employer. Women and members of minority groups are strongly encouraged to apply.

BIOLOGISTS. Two 1-year assistant professor positions available for 1984-1985. Expertise preferred in (i) cell/molecular/microbiology and (ii) organismic structure/function. Probable teaching responsibilities include (i) molecular or microbiology, introductory cell biology, and biochemistry and (ii) vertebrate anatomy and laboratories in general physiology and embryology or introductory biology. Expected teaching load: 10 to 12 hours. Ph.D. required. Our current staff numbers nine, all maintaining research programs that often involve undergraduates. By 20 March 1984, please send letter, curriculum vitae, graduate and undergraduate transcripts, and names of three references to: **Dr. Jonathan Richardson, Chairman, Biology Department, Franklin and Marshall College, Lancaster, Pa. 17604.** An Equal Opportunity Employer.

POSITIONS OPEN

BACTERIAL GENETICIST. The Department of Plant Pathology, University of Florida, has a tenure-track opening at the assistant professor level for a bacterial geneticist. The appointee will direct a research program on the molecular genetics of bacterial plant pathogens and contribute to the department's graduate teaching program. We are particularly interested in an individual who will use innovative approaches to answer fundamental questions about pathogenesis and resistance at the molecular level. A Ph.D. degree in biochemistry, microbiology, molecular biology, plant pathology, or a related field is required, and postdoctoral experience in the manipulation of extrachromosomal elements is desirable. Applicants should send curriculum vitae, transcripts, and three letters of reference by 20 March 1984 to: **Dr. Steven G. Pueppke, Department of Plant Pathology, University of Florida, Gainesville, Fla. 32611.**

TWO BIOLOGY FACULTY POSITIONS—Bucknell University invites applications for the following tenure-track positions: (i) **molecular biologist** with emphasis in either genetics or development; (ii) **vertebrate biologist** with emphasis in morphology and either embryology or field/systematics. Each successful applicant will participate in a freshman-level, majors course and will develop advanced courses in areas of expertise. Ph.D. strongly preferred. Appointments will be at the assistant professor level. Application, including a letter describing background and research interests, curriculum vitae, transcripts, and three letters of reference, should be sent by 6 March 1984 to: **Richard J. Ellis, Chairman, Department of Biology, Bucknell University, Lewisburg, Pa. 17837.**

Bucknell University is an Equal Opportunity Employer.

The Department of Neurosurgery of the University of California, San Francisco (UCSF), is searching for an experienced **Ph.D. BIOLOGIST** to serve as an assistant professor-in-residence, step I or II (salary and level to be commensurate with training and experience), in the Brain Tumor Research Center with teaching and research commitments. Candidates must have training and experience in biochemistry, pharmacology, and cell biology with, in particular, recent hands-on and acknowledged expertise in tumor and hematopoietic stem cell analysis techniques. Knowledge of neuropathology and neurooncology is advantageous. The successful candidate will be required to participate in teaching at the University level to graduate and postdoctoral fellows and to actively engage in laboratory efforts involved with the study of brain tumor biology and the effects of chemotherapy.

The beginning date of employment will be 1 July 1984. Applications for the position will be accepted through 15 May 1984. Salary rate will be negotiated with the successful candidate. Persons interested in applying should forward complete curriculum vitae and bibliography with the names of three references to: **Mark L. Rosenblum, M.D., Department of Neurosurgery, 786M, University of California, San Francisco, California 94143.**

UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

BIOLOGIST

W. Alton Jones Cell Science Center invites applications for a senior biologist in developmental cellular immunology. Candidates must have a Ph.D. degree in the area of cell biology, developmental biology, genetics, and immunology. Work will be on the early phase of T cell development. In vitro culture of TdT positive rat bone marrow T cell progenitor cells and its application to leukemia therapy and therapy for autoimmune disease and other immune disorders. Knowledge on biochemical techniques, fluorescence-activated cell sorter (FACS), transmission electron microscope, microsurgery on chick and amphibian embryos, and various immunological techniques including immunofluorescence will be expected of the successful applicant. Terms and conditions of employment will include: 37½-hour, 5-day workweek; some overtime involved. Salary: \$25,000 to \$50,000 per year. Benefits: annual vacation, paid holidays, sick leave, medical insurance, life insurance, dental insurance, long-term disability, and pension.

For applicant procedures, contact:

**New York State Job Service
11 St. Bernard Street
Saranac Lake, New York 12983**

Refer to Job Order Number 3577556; D.O.T. Code Number 041 061 030.

POSITIONS OPEN

The **DEPARTMENT OF BIOLOGY** at Purdue University Calumet seeks to fill two tenure-track positions:

1) The position **Head—Department of Biology** is now reopened and will be filled at the rank of associate professor, or higher, with a one-half time teaching obligation. Preferred area of expertise is **HUMAN PHYSIOLOGY**. Requirements include history of effective teaching and research; administrative experience desirable. Candidate selected will assume duties in July 1984. Submit curriculum vitae and arrange for three letters of recommendation to be sent **DIRECTLY FROM REFERENCES**;

2) This position will be filled at the rank of **assistant professor**; Ph.D. required. Preferred area of expertise is **VERTEBRATE ZOOLOGY** and the successful candidate is expected to teach in the areas of anatomy, physiology, and embryology. Candidate selected will assume duties in August 1984. Submit curriculum vitae, transcripts, and arrange for three letters of recommendation to be sent **DIRECTLY FROM REFERENCES**.

Applications for each position will be accepted until 8 March 1984. Apply to: **Robert J. Werth, Ph.D., Chairman-Search Committee, Department of Biology, Purdue University Calumet, Hammond, Indiana 46323.**

Affirmative Action/Equal Opportunity Employer

Immediate opening for an **assistant research BIOPHYSICIST**. Position is for a biophysicist to apply biochemical and biophysical techniques to the study of muscle contraction. Applicant should have a strong background in the physical sciences. Apply to: **Dr. Roger Cooke, 841-HSW, University of California, San Francisco, Calif. 94143.** *University of California, San Francisco, is an Equal Opportunity/Affirmative Action Employer.*

CELL BIOLOGIST DEPARTMENT OF ANATOMY UNIVERSITY OF MINNESOTA

The Department of Anatomy at the University of Minnesota Medical School in Minneapolis announces a cell biologist position to begin as early as 1 September 1984. Appointment may be either at the **assistant professor** (tenure track) or **associate professor** (tenured) level, depending on the qualifications of the successful candidate. Applicants must have postdoctoral or equivalent research experience and must have demonstrated the ability to pursue an active, productive research program in an area of cell biology. A multidisciplinary approach with a morphological component is much desired. Teaching responsibilities will include joint participation in histology and graduate teaching in an area of specialty. Curriculum vitae, brief statement of research interests and goals, reprints of publications, and names of three references must be received by 1 March 1984, addressed to: **Search Committee, Department of Anatomy, University of Minnesota, 4-135 Jackson Hall, 321 Church Street, SE, Minneapolis, Minn. 55455.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*



CELL BIOLOGY IMMUNOLOGY BIOCHEMISTRY

Hana Biologicals, leading world-wide manufacturer of diagnostic and innovative cell culture media, is seeking creative, aggressive research professionals to expand our research staff. Openings exist for immunologists and biochemists with experience in diagnostic methodology as well as cell biologists with extensive cell culture experience.

Hana has strong interests in developing novel culture systems for mammalian cells currently used in research and industry and in developing proprietary diagnostic systems. We offer excellent facilities, salaries, and benefits in an aggressive product-oriented company.

Send résumé to:

**Director R & D
Hana Biologicals, Inc.
626 Bancroft Way
Berkeley, CA 94710**

Kuwait Institute for Scientific Research (KISR)

Kuwait Institute for Scientific Research is a non-profit organization with a staff of more than one thousand employees engaged in applied research in the fields of environmental and earth sciences, food resources, engineering, petroleum, petrochemicals and materials and technoeconomics.

Presently, KISR has a vacancy for:

PLANT PROTECTION SPECIALIST

Major Duties

- Survey the various agricultural pests, namely, insects, fungi, nematodes and weeds of trees, shrubs, ground cover and ornamental plants.
- Survey the host or hosts of each pest.
- Record the symptoms of each infestation to help identify the pest in the field.
- Co-ordinate efforts with general authority for agriculture regarding control measures and treatment applications.

Qualifications

Applicants should have a M.Sc. degree in plant protection/entomology with minimum two years experience in diseases and infestation of trees, shrubs, ground cover and ornamental plants. Familiarization with lab techniques for detection of disease and plant infestation as well as arid land experience preferred.

KISR offers attractive salaries (tax free) commensurate with qualifications and experience and generous benefits which include gratuity, free furnished airconditioned accommodation, school tuition fees, contribution to a savings plan, five weeks annual paid vacation, air tickets, free medical care and life insurance.

Those interested may kindly send in their curriculum vitae with supporting information no later than one month from the date of this publication to:

Mr. Habeeb Al-Sahhaf
Personnel Manager
Kuwait Institute for Scientific Research
P.O. Box 24885 Safat
Kuwait.

ICSU/UNESCO DISTINGUISHED FELLOWSHIPS IN SCIENCE

The International Council of Scientific Unions (ICSU) and the United Nations Educational, Scientific and Cultural Organization (Unesco) announce the ICSU/Unesco Distinguished Fellowship Programme in Science for 1985. Support is anticipated for at least four fellowships to be awarded. This includes two fellowships through a generous grant from the Karim Rida Said Foundation which gives special preference to candidates from Arab States.

These fellowships will be granted in the natural sciences, including their application to development, in order to strengthen the scientific capacity of developing nations. The fellowship will be awarded to individuals who have demonstrated exceptional scientific ability at the level of Ph.D. or its equivalent, and who desire to advance their scientific knowledge in order to conduct basic research relevant to national needs.

Candidates may be of either sex and will come from developing countries and will be under 35 years of age when the fellowship begins. Candidates will ordinarily have had at least one year of post-doctoral experience; special consideration will be given to candidates who have done research in their native region. Fellowships will be awarded for one year, with extension for a second year in exceptional circumstances, and will be tenable in any centre of scientific excellence in the world. A letter will be required to show that the candidate will be accepted in the host department or laboratory where he proposes to study. In order to make sure that a position will be available when the fellow returns to his native region, institutional commitment of a post will be required with the application as well as governmental or institutional approval of the application for the fellowship.

The stipend will depend upon the cost of living in the country in which the fellowship will be tenable. If the fellowship were to be held in the United States, for example, the stipend would be US \$20,000 per year in addition to US \$1,000 for each dependent (to a maximum of three).

Tourist-class travel will also be provided to the fellow and his dependents (to three). There will also be an institutional allowance of US \$2,000 to the host department for the purpose of covering expenses incidental to the fellows training and research.

An important feature of the award is the follow-up programme which includes a grant of up to US \$5,000 (supplied by Unesco) to the Fellow for research materials and services to support a research project to be carried out in the Fellow's region of origin. Another feature is the award of two travel grants in the 2-3 year period after completion of the Fellowship. These travel funds will allow one visit by the Fellow to his foreign, host institution as well as one lectureship for his foreign mentor, tenable in the country or region in which the former Fellow's research project is being conducted.

Application forms for the ICSU/Unesco Distinguished Fellowships in Science will be available from the National Commissions for Unesco or from the Division of Scientific Research and Higher Education at Unesco, 7 place de Fontenoy 75700 Paris, France. The forms will also be obtainable from the Unesco Regional Offices (Unesco Regional Office for Science and Technology for Africa, P.O. Box 3059, Nairobi, Kenya; Unesco Regional Office for Science and Technology in Southeast Asia, United Nations Building, 2nd Floor, Jalam Thamrin 14, 273/JKT Tromolpos, Jakarta, Indonesia; Unesco Regional Office for Science and Technology for Latin America and the Caribbean, 1320 Blv. Artigas, Casa Postal 859, Montevideo, Uruguay; Unesco Regional Office for Science and Technology in the Arab States, 7 place de Fontenoy, 75700 Paris, France), Unesco Regional Office for Science and Technology for South and Central Asia, Unesco House, Jor Bagh, Lodi Road, New Delhi 110003, India.

Completed application forms in triplicate should be sent to the Division of Scientific Research and Higher Education, Unesco, 7 place de Fontenoy, 75700 Paris, France. They should be received at Unesco not later than 15 March 1984.

Applications which are not complete will not be considered.

Awards will be announced about July 1984 and the fellowships will begin between September and October 1985.

POSITIONS OPEN

CARBOHYDRATE CHEMIST—Assistant professor level. To develop research program on the chemistry of simple and complex sugars. This may include isolation, identification, and structural modification of these substances. In addition, sensory physiological studies will be conducted in collaboration with other staff members.

BIOCHEMIST—Postdoctoral. To study receptor function, characterization, and isolation in vertebrate gustatory systems.

NEUROSCIENTIST—Postdoctoral. To study physiology of nasal chemoreception including trigeminal nerve recordings using volatile irritants and an electrophysiological analysis of specific anosmia.

NUTRITIONAL BIOCHEMIST—Postdoctoral. To study role of lipid and/or hepatic metabolism in appetite control using in vivo and in vitro techniques.

All positions available immediately. Send curriculum vitae (indicate position for which you are applying) and names of three references to: **Director, Monell Chemical Senses Center, 3500 Market Street, Philadelphia, Pa. 19104. Equal Opportunity/Affirmative Action Employer.**

CELL/DEVELOPMENTAL BIOLOGIST

The Department of Biology at the University of California, San Diego, invites applications for a tenure-track faculty position, available 1 July 1984, in the general areas of cell and/or developmental biology. Salary and rank will be commensurate with qualifications and experience. The appointee must have had postdoctoral training and is expected to conduct a vigorous research program. Excellence in teaching and in the pursuit of an independent research program are the criteria to be met. Applicants should send curriculum vitae, a list of publications, and a brief statement of research interests by 30 March 1984 to: **Joan Turner, Department of Biology B-022, University of California, San Diego, La Jolla, Calif. 92083. The University of California at San Diego is an Equal Opportunity/Affirmative Action Employer.**

CHAIRMAN DEPARTMENT OF ANATOMY

Applications are invited for the position of professor and chairman, Department of Anatomy, Schools of Medicine and Dentistry, University of Alabama in Birmingham. We are seeking candidates with research and teaching experience, leadership qualities, and administrative skills. This department has teaching responsibilities for graduate students in anatomy, medical, dental, and other students. Please submit applications and curriculum vitae to:

**Antonietta D. Hyche
Administrative Officer
University of Alabama School of Medicine
Dean's Office—MEB 306
Birmingham, Alabama 35294**

An Equal Opportunity/Affirmative Action Employer

CHAIRPERSON AND PROFESSOR

The Department of Zoology of Iowa State University is accepting applications and nominations for a chairperson. The department currently has a permanent faculty of 26 and is strongly research oriented. Principle areas of staff research are cell and molecular biology, developmental biology, endocrinology, neurobiology, physiology, and parasitology. Applicant should have the Ph.D. or equivalent, have an established record of achievement in experimental zoology, and be able to provide leadership in research and teaching. Send résumé, including names of four references, to: **James R. Redmond, Department of Zoology, Iowa State University, Ames, Iowa 50011. Review of applications will begin 26 March 1984. Iowa State University is an Equal Opportunity/Affirmative Action Employer.**

DIRECTOR—CANCER RESEARCH

For Northern California Cancer Program with active programs in clinical and basic research, epidemiology, cancer surveillance, and cancer control. Coordinates cancer-related activities of major universities, hospitals, research institutions, and cancer agencies. NCI-designated cancer center seeks scientific leader experienced in cancer research, proven administrator. Excellent research and academic opportunities. Salary and total compensation package attractive.

Send curriculum vitae to: **Jerry Lewis, M.D., Chairman, Board of Trustees, Northern California Cancer Program, P.O. Box 10144, Palo Alto, Calif. Equal Opportunity Employer.**

POSITIONS OPEN

CHAIRPERSON DEPARTMENT OF PATHOLOGY UNIVERSITY OF TEXAS MEDICAL BRANCH (UTMB)

Applications and nominations are invited for the position of chairperson of the Department of Pathology. The position is an unusual opportunity to develop an internationally leading academic department due to outstanding resources, scientific environment, and faculty positions. Teaching includes medical and graduate students. Service is to a 1000-bed hospital complex. Academic goals are the highest. We seek a person of senior academic accomplishment with administrative experience or potential. Application or nomination should include curriculum vitae. Address correspondence to:

**Jay C. Fish, M.D.
Department of Surgery, G-33
The University of Texas Medical Branch
Galveston, Texas 77550**

UTMB is an Affirmative Action/Equal Opportunity Employer.

DEAN, SCHOOL OF GRADUATE STUDIES AND ASSOCIATE VICE PRESIDENT FOR RESEARCH

Qualifications include earned doctorate or equivalent degree, previous research activity, and the ability to provide leadership to varied graduate programs. Nominations must be received by 1 March 1984 and applications by 30 March 1984. Send résumé, list of publications, theses and dissertations directed, and the names, addresses, and telephone numbers of five references to: **Richard S. Fisher, Chairman of Search Committee, UTAH STATE UNIVERSITY, Logan, Utah 84322. An Affirmative Action/Equal Opportunity Employer.**

PANLAB GENETICS, INC.

**Director and Staff Scientists for
Fungal Molecular Biology Research**

Panlab Genetics, Inc., an internationally known service research organization having nearly 200 clients in 15 countries, is seeking to assemble a team in its Seattle laboratory to develop recombinant DNA and vector technology in filamentous fungi. Applications are invited from postdoctoral molecular biologists for the above positions. Experience with filamentous fungi is desirable but not essential. An attractive salary plus relocation expenses are offered. Please send curriculum vitae, including names of three referees, to:

**Dr. Christopher Ball
Panlab Genetics, Inc.
110-110th Avenue, NE, Suite 704
Bellevue, Wash. 98004**

An Equal Opportunity Employer

ECOLOGIST

The MUSEUM OF NORTHERN ARIZONA will add a field ecologist 1 October 1984. Primary responsibility is to carry out own funded research in the Southwest using experimental and theoretical approaches to population and/or community ecology, with secondary responsibility for collections, exhibits, and museum education. Ph.D. required; postdoctoral experience preferred. Prior success in grantsmanship and interest in Colorado Plateau desirable. Closing date: 15 March. Apply with curriculum vitae and three letters of reference to: **Dr. A. M. Phillips III, Curator of Biology, Museum of Northern Arizona, Route 4 Box 720, Flagstaff, Ariz. 86001.**

EDUCATIONAL PROJECT DIRECTOR

The Harvard-Smithsonian Center for Astrophysics is pursuing an educational initiative built around the use of astronomy as a vehicle for teaching science and mathematics at the precollege level. In anticipation that funding will become available by fall 1984, the Center is seeking a director for the project. Candidates should have a strong background in astronomy and the physical sciences, preferably with experience in teaching and developing educational material for the college or precollege level.

Candidates should submit curriculum vitae, representative writing samples, and other relevant material to:

**Irwin Shapiro
Harvard-Smithsonian Center for Astrophysics
60 Garden Street, P-209
Cambridge, Mass. 02138**

Harvard College Observatory and the Smithsonian Astrophysical Observatory are Equal Opportunity/Affirmative Action Employers.

POSITIONS OPEN

DIRECTOR, ANALYTICAL CHEMISTRY

Responsible for non-routine analytical research activities, including providing technical support to our research and development groups, for the development of new analytical procedures for distribution throughout the world, for troubleshooting manufacturer's difficulties, and for emergency analytical work required when the adulteration of product is suspected. Wholly responsible for the ongoing routine functions of the department, including the routine testing of raw materials prior to their use in production of our extensive range of consumer products and medicines as well as the products resulting from their use; 36.25-hour week; salary: \$1013.46 per week. Applicants must have Ph.D. in analytical chemistry and 5 years of experience in the job. Interested applicants should contact:

**Connecticut State Job Service
100 Arch Street
New Britain, Conn. 06051
Refer to Job Order Number 357978**

ENVIRONMENTAL PATHOLOGY/TOXICOLOGY. Pre- and postdoctoral positions available July 1984. Research emphasis is on cellular and molecular effects (mutagenesis, teratogenesis, biotransformation) of toxic chemicals (especially trace metals, aromatic hydrocarbons, pesticides). Deadline: 1 April. Inquiries: **N. Karle Mottet, M.D., Program Director, Professor of Pathology and Environmental Health, SM-30, University of Washington, Seattle, Wash. 98195. Affirmative Action/Equal Opportunity Employer.**

FACULTY POSITION

ASSOCIATE PROFESSOR—PERIODONTOLOGY. The University of California, San Francisco, School of Dentistry, Department of Stomatology, seeks applicants for the position of associate professor. A dental degree and an advanced (M.S. or Ph.D.) degree in an area related to oral microbiology and immunology are required. Since appointment at this level is tenured, a substantial record of research and teaching is expected. Areas of responsibility will include development of combined clinical and postdoctoral or graduate training programs, teaching at the predoctoral, postdoctoral, and graduate level, and research. Projected starting date is 1 July 1984. Salary commensurate with experience. Submit curriculum vitae to: **Dr. Robert J. Isaacson, Chair, Search Committee, C-734, University of California, San Francisco, School of Dentistry, San Francisco, Calif. 94143. Closing date for applications or nominations is 15 March 1984. The University of California San Francisco, is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.**

FACULTY POSITION IN GERONTOLOGY

The Institute of Gerontology and the Department of Biological Chemistry at The University of Michigan are searching jointly for an investigator whose gerontological pursuits are rooted in biochemistry and/or molecular biology. The successful candidate will demonstrate a distinguished record of independent publications and external funding, and will qualify for a tenured faculty appointment. Responsibilities include independent research and teaching. Salary is negotiable. The following information must be forwarded by 15 March 1984 to: **Richard C. Adelman, Ph.D., Director, Institute of Gerontology, 300 North Ingalls, The University of Michigan, Ann Arbor Mich. 48109-2007.**

- 1) Curriculum vitae and bibliography
- 2) Three letters of recommendation, and
- 3) A detailed list of external funding during the past 5 years.

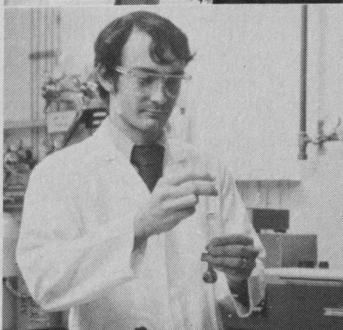
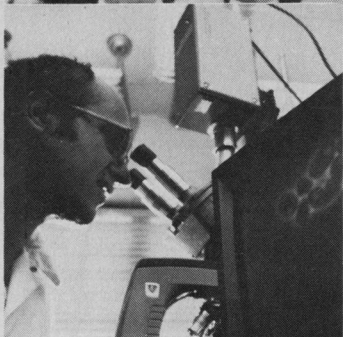
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SENIOR ANALYTICAL CHEMIST

Handling a variety of non-routine research activities including providing technical support to our research and development groups for the development of new analytical procedures for distribution to research and manufacturing facilities throughout the world, for "troubleshooting" manufacturer's difficulties, and for emergency analytical work required when the adulteration of a product is suspected; 36.25-hour week; salary: \$788.46 per week. Applicants must have a Ph.D. in analytical chemistry and 3 years of experience in the job. Interested applicants should contact:

**Connecticut State Job Service
100 Arch Street
New Britain, Conn. 06051
Refer to Job Order Number 357977**

A community of scientists... **ROCHE**



Hoffmann-La Roche is an international company with a 75 year history of leadership in the development of pharmaceuticals, vitamins and fine chemicals.

We are vigorously involved in advanced research in biology, chemistry and related disciplines. Ours is a dynamic community in which highly-trained scientific minds have the stimulus, the resources, and the environment for significant achievement.

Our past work has produced many new tools for use against physical and mental illnesses, infectious diseases, and malnutrition.

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We are a community of scientists and also a community of commitment, whose work extends and enhances human life.

At Roche, there is always room for exceptional individuals who can make a contribution to our activity.

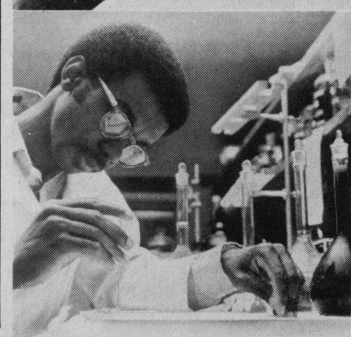


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POSITIONS OPEN

FACULTY POSITION UNIVERSITY OF NEBRASKA

The Department of Medical Microbiology, University of Nebraska College of Medicine, invites applications for a 12-month, tenure-track faculty position at the assistant or associate professor level. Rank will depend on qualifications, but should include post-doctoral training and an excellent publication record. Applicants must be interested in teaching in medical and graduate programs and have a strong, independent research program. The individual should be skilled in molecular aspects of microbial pathogenesis of the Gram-negative facultatively anaerobic bacilli. Please send curriculum vitae, a statement of research interests and goals, and three letters of reference by 15 May 1984 to:

H. W. McFadden, Jr., M.D., Chairman
Department of Medical Microbiology
University of Nebraska Medical Center
42nd and Dewey Avenue
Omaha, Nebraska 68105

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

The University of Michigan, Department of Otorhinolaryngology, and the Kresge Hearing Research Institute have **TWO FACULTY POSITIONS** available for persons with a Ph.D. in psychology or physiology. Background in psychoacoustics and experience in auditory research are desired; assistant or associate professor level. Apply to: **Jochim Schacht, Ph.D., Department of Otorhinolaryngology, 6018 KRHI, Ann Arbor, Mich. 48109.** A nondiscriminatory, Affirmative Action Employer.

HUMAN GENETICIST: Tenure-track position supported by state of Texas funds for independent research in human biochemical/population genetics and to supervise the Genetic Markers Laboratory of the Center for Demographic and Population Genetics. The position provides access to the extensive clinical and technical resources of the Texas Medical Center, Houston. Candidate must be a Ph.D. or M.D. with considerable research experience and publications, and with supervisory experience. Teaching responsibilities are modest but supervision of graduate student research will be expected. Salary and title commensurate with qualifications. Application deadline is 30 April 1984. *An Equal Opportunity Employer; women and minorities are encouraged to apply.*

Please send curriculum vitae and the names of three references to:

William J. Schull, Ph.D., Director
Center for Demographic and Population Genetics
Graduate School of Biomedical Sciences
The University of Texas Health Sciences Center
P.O. Box 20334
Houston, Texas 77225

Ph.D. PSYCHOLOGIST. University of Michigan, Department of Physical Medicine and Rehabilitation, seeks research-oriented clinician with rehabilitation or behavioral medicine experience for permanent faculty position in medical setting treating physically disabled children and adolescents. Expertise treating spinal cord and traumatic brain injured patients desirable; \$24,000 to \$27,500 for 12 months. Interview expenses may be shared. Send letter, curriculum vitae, and names of three references to: **Donald Kewman, Ph.D., Director, Psychosocial Vocational Division, Department of Physical Medicine and Rehabilitation, University Hospitals, Ann Arbor, Mich. 48109-0010.** A nondiscriminatory, Affirmative Action Employer.

University of Michigan Medical School, Department of Surgery, is seeking candidates for an open position as a **RESEARCH INVESTIGATOR/ASSISTANT RESEARCH SCIENTIST** in the Section of Urology. Applicants should have a doctoral degree and will be expected to develop and support a strong research program. The current research effort in tumor immunology has strength in the areas of tissue culture and serology. We are seeking applicants who will complement these areas and also provide expertise in biochemistry. Appointment at faculty rank will be contingent on demonstrated research excellence and continued grant support. Send replies along with curriculum vitae to: **H. Barton Grossman, M.D., Assistant Professor, Urology, The University of Michigan Hospitals, 1405 East Ann Street, Ann Arbor, Michigan 48109.** A nondiscriminating, Affirmative Action Employer.

POSITIONS OPEN

FACULTY POSITION IN MOLECULAR BIOLOGY

As part of a continuing program of growth and development, the Boston College Biology Department will make several tenure-track appointments during the next few years. Applications are invited for the first position, which will be filled as early as September 1984 at the assistant or associate professor level. Candidates should have a vigorous research program in molecular biology, techniques, and have a commitment to teaching at the graduate and undergraduate levels.

We offer a competitive salary and start-up funds. The department has an active M.S. and Ph.D. program in research areas that emphasize the cellular, molecular, and biochemical approaches to biological problems.

Applications, including the names of three references, should be submitted by 1 April 1984 to: **Chairman, Biology Search Committee, Biology Department, Higgins Hall, Boston College, Chestnut Hill, Mass. 02167.**

VIRGINIA INSTITUTE OF MARINE SCIENCE FISHERIES POPULATION DYNAMICIST

The Department of Fisheries Science, School of Marine Science/Virginia Institute of Marine Science (VIMS), invites applications for a tenure-track assistant or associate professor position in fisheries population dynamics. Candidates must have a Ph.D. in marine ecology, oceanography, fisheries science, or related fields. Experience is required in fisheries population dynamics, statistics, and marine field ecology.

The incumbent will be expected to develop a research program on, and assess the population dynamics of major finfish and shellfish stocks of commercial and recreational importance to the Commonwealth. Particular research focus should be on how stock-recruitment and mortality relationships are related to environmental fluctuations.

Academic responsibilities will include conducting formal courses (including population dynamics), directing graduate research, and serving on academic committees.

Prior to 1 April 1984, applicants should submit curriculum vitae, statement of research interests, and the names and addresses of three references to: **Herbert M. Austin, Chairman, Search Committee, VIMS, Gloucester Point, Virginia 23062.**

An Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.

The University of Puget Sound invites applications for the following tenure-track positions in the Department of Biology, to begin August 1984.

GENETICIST: Teach one-semester general genetics course for majors each year; teach one-semester advanced course in genetics or molecular biology for upper division majors; participate in introductory biology sequences for majors/non-majors. Candidates with training in molecular or developmental genetics preferred.

PLANT BIOLOGIST: Teach one-semester lecture/laboratory course in specialty for upper division majors and participate in team-taught introductory biology sequence for majors; teach one-semester introductory biology course for non-majors. Candidates with training in plant molecular biology, morphology, development, or quantitative plant ecology preferred.

Both positions require the Ph.D. and commitment to teaching and research with undergraduates. The successful candidates will initiate and maintain research programs involving undergraduates, advise students, and participate in departmental/University governance. To apply for either position, submit letter of interest, curriculum vitae, transcript, and the names of three references by 16 March 1984 to: **Geneticist Search OR Plant Biologist Search (specify), University of Puget Sound, P.O. Box 7297, Tacoma, Wash. 98407.** *An Equal Opportunity/Affirmative Action Employer.*

HISTOLOGY, NEUROANATOMY, AND PATHOLOGY LABORATORY INSTRUCTORS

Three full-time laboratory instructors with responsibility for laboratory instruction in at least two of the above areas. Requirements: master's or Ph.D. degree and demonstrated teaching ability. Candidates should send detailed curriculum vitae, transcripts, and three letters of reference by 15 March 1984 to: **Sister John Karen Frei, O.P., Ph.D., Director of the Division of Biological and Biomedical Science, Barry University, Miami Shores, Florida 33161.**

POSITIONS OPEN

SCHOOL OF PUBLIC AND ENVIRONMENTAL AFFAIRS INDIANA UNIVERSITY

HYDROLOGY AND APPLIED FLUID MECHANICS (rank open)—Requires teaching and research in the areas of hydrology, water resources engineering, or modeling of surface and ground water systems. Applicants should have a doctorate in civil or environmental engineering, and demonstrated interests and abilities in conducting laboratory and field investigations in any of the above areas. Interested applicants should send curriculum vitae to the following address no later than 1 April 1984.

Dr. Roy Jumper, Associate Dean
School of Public and Environmental Affairs
Indiana University
Bloomington, Ind. 47405

An Equal Opportunity, Affirmative Action Educator, Employer, and Contractor, M/F.

IMMUNOLOGIST

Ph.D. immunologist to direct in vitro RIA laboratory and participate in active monoclonal antibody research program. Written inquiry, to include curriculum vitae, to: **W. H. Beierwaltes, Director, Nuclear Medicine Division, Box 021, Room W5614, University of Michigan Hospitals, Ann Arbor, Mich. 48109.** A nondiscriminatory, Affirmative Action Employer.

MEMBRANES AND TRANSPORT—POSTDOCTORAL POSITIONS are available for cell physiologists/biochemists to study mechanisms of ion transport across cell membranes. Studies with reconstituted red cell ghosts, purified Na, K-ATPase and other systems using tracer techniques, biochemistry, and photochemistry. Salary at appropriate NIH levels. Beginning summer 1984 for 1 to 3 years. Send curriculum vitae and names of references to: **Dr. Jack H. Kaplan, Department of Physiology, School of Medicine, University of Pennsylvania, Philadelphia, Pa. 19104.** *Equal Opportunity/Affirmative Action Employer.*

TRUDEAU INSTITUTE

POSTDOCTORAL POSITION is available to study mechanisms of host resistance to chronic mycobacterial lung infections. Candidates should have a strong background in cellular immunology of molecular biology. Experience with hybridoma technology would be helpful but not essential.

The Trudeau Institute is a not-for-profit basic research institute situated on the shore of Saranac Lake, 8 miles from Lake Placid, N.Y. Pay scale is \$15,500 to \$17,500 with generous fringe benefits. Campus housing is available.

Send curriculum vitae and names of three references to: **Dr. Frank M. Collins, Trudeau Institute, Inc., P.O. Box 59, Saranac Lake, N.Y. 12983.** *An Equal Opportunity Employer.*

TRUDEAU INSTITUTE

POSTDOCTORAL FELLOW IN IMMUNOBIOLOGY. A position exists for a postdoctoral fellow to study the immunobiology of the tumor-host relationship. Current research is directed at investigating T cell-mediated, down regulation of the anti-tumor immune response. Applicants should have a knowledge of immunology.

The Trudeau Institute is a not-for-profit basic research institute situated on the shore of Saranac Lake, 8 miles from Lake Placid, N.Y. Pay scale is \$15,500 to \$17,500 with generous fringe benefits. Campus housing is available.

Send curriculum vitae and names of three references to: **Dr. Robert J. North, Director, Trudeau Institute, Inc., P.O. Box 59, Saranac Lake, N.Y. 12983.** *An Equal Opportunity Employer.*

TRUDEAU INSTITUTE

Applications are invited for an **IMMUNOBIOLOGIST** to develop an independent research program related to immunity to cancer or infectious diseases. Appointment may be made at either junior or senior faculty rank. Applicants should have at least 3 years of postdoctoral experience and provide visible evidence that they already have been scientifically productive. Funds are available to support the successful applicant for a minimum of 3 years. The Trudeau Institute is a not-for-profit pure research institute situated on the shore of Saranac Lake, N.Y., 8 miles from Lake Placid, N.Y. Send curriculum vitae and names of three references to: **Dr. Robert J. North, Director, Trudeau Institute, Inc., P.O. Box 59, Saranac Lake, N.Y. 12983.** *An Equal Opportunity Employer.*

EPIDEMIOLOGIST

The Board on Toxicology and Environmental Health Hazards of the National Academy of Sciences is seeking a professional in the area of epidemiology or a closely related biomedical science. The individual will act as a Staff Officer for a study on the epidemiologic investigations of criteria air pollutants. Duties will include working with a committee of experts, directing a small research staff, and providing general intellectual overview of a major report. A Ph.D., M.D., or equivalent is required with several years experience in policy issues, familiarity of literature on human exposure assessment and epidemiologic and statistical methodology. Must understand the utilization of scientific information in societal decision making and have the ability to integrate data from a wide variety of disciplines. **Applicants should submit in confidence a curriculum vitae to Dr. Devra L. Davis, National Academy of Sciences, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.** An Equal Opportunity Employer.

The Agricultural Research Division of American Cyanamid Company, in Princeton, New Jersey is seeking a:

TOXICOLOGIST with a minimum of 5 years industrial or contract laboratory experience. Responsibilities include protocol development, data reviews, interpretation of data, study monitoring, compliance review and interaction with regulatory personnel. Requires PhD in Toxicology or related discipline with good oral and written communications skills.

and a

CYTOGENETICIST to perform chromosomal aberration and SCE assays. Requires PhD plus 2 years of related post doctoral experience.

Send resumes in confidence to the Employment Office at:



American Cyanamid Company
Agricultural Research Division
P.O. Box 400
Princeton, NJ 08540

An Equal Opportunity Employer, M/F/H
No Agencies, Please.

DIVISION OF RESEARCH RESOURCES NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH AND HUMAN SERVICES

The National Institutes of Health (NIH), Division of Research Resources (DRR) invites nominations and applications for the position of Chief, General Clinical Research Centers Program Branch (GCRCPB).

The position is a Civil Service position established as Medical Officer, GM-602-15 with a salary range from \$53,407 to \$67,969 (currently limited to \$66,000 per annum. Physicians may also be eligible for Physicians' Comparability Pay up to \$10,000 per year.)

The GCRCPB Branch is responsible for administration of a grant-in-aid program currently supporting 74 clinical research centers with 600 research beds, which serve as institutional research resources for inquiry, examination, evaluation, and training in an effort to define the basic processes of human disease and its treatment. The Chief, General Clinical Research Centers Program Branch, is responsible for the program planning, development, evaluation, and management of the GCRCPB which utilizes resource grants and contracts to provide high quality clinical research environments throughout the nation.

Candidates must meet the minimum educational requirements for Medical Officer, GM-602-15 (or equivalent combination of experience and training as defined

by the U.S. Office of Personnel Management Handbook X-118 Qualification Standards for Positions under the General Schedule), plus at least five years of professional experience in research program administration in which professional judgements were exercised through the application of scientific knowledge of health and clinical research. In addition, the incumbent must have managerial experience, and knowledge of research programs in one or more areas related to clinical research.

Further information about the position and qualification requirements may be obtained by contacting Ms. Pathenia A. Wiggins at (301) 496-1524. Applications (Personal Qualifications Statement, SF-171) accompanied by current curriculum vitae and bibliography should be submitted to Ms. Wiggins at the DRR Personnel Office, National Institutes of Health, Building 31, Room 5B06, 9000 Rockville Pike, Bethesda, Maryland 20205. Applications should be postmarked no later than February 29, 1984.

Applications from women and minority group members are especially solicited.

THE NATIONAL INSTITUTES OF HEALTH IS AN EQUAL OPPORTUNITY EMPLOYER.

POSITIONS OPEN

MICROBIAL GENETICIST/BIOCHEMIST

The Department of Biology at Texas A&M University invites applicants for a faculty position in the area of microbiology. Candidates must have a Ph.D. in microbiology or biochemistry, postdoctoral experience, and the ability to establish a quality independent research program. Preference will be given to candidates with research interests in the area of membrane/secreted protein processing. The successful candidate will be expected to establish an externally funded research program and develop graduate and undergraduate courses in bacterial genetics. The appointment will be for 9 months with academic rank and salary commensurate with experience. The appointment will begin 1 September 1984. Candidates should submit complete curriculum vitae and the names of three references to: **Dr. Walter M. Kemp, Acting Head, Department of Biology, Texas A&M University, College Station, Texas 77843.** Applications will be accepted until 15 March 1984. *Texas A&M University is an Equal Opportunity/Affirmative Action Employer. Candidates from recognized minority groups are especially encouraged to apply.*

MOLECULAR GENETICS. The University of Illinois announces the current availability of two tenured or tenure-track positions at the assistant or associate professor level in the Department of Veterinary Pathobiology. Qualified individuals are expected to have a Ph.D. or equivalent, and clear evidence of research capability in one of the areas of eukaryotic, viral, or bacterial molecular genetics with an interest and commitment to problems of importance in veterinary medicine. In addition to developing an active, independent, and collaborative research program, duties will include teaching veterinary and graduate students in an area of microbiology and guiding graduate student research. Salary is competitive and negotiable based on experience and qualifications. Individuals applying prior to 15 March 1984 will be given preference. Send résumé and three letters of reference to:

Dr. Wayne A. Tompkins
Department of Veterinary Pathobiology
College of Veterinary Medicine
University of Illinois
2001 South Lincoln Avenue
Urbana, Ill. 61801
Telephone: 217-333-7825

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

MOLECULAR GENETICIST Department of Molecular and Population Genetics UNIVERSITY OF GEORGIA

The University of Georgia is seeking a molecular geneticist for a tenure-track position available fall 1984 or winter 1985. This opening is in addition to the molecular geneticist position advertised earlier. The exact area of research and academic rank are open, but candidates are expected to pursue an active research program and to teach at both the graduate and undergraduate levels. The Department of Genetics has 14 faculty members and strong research programs in molecular and population genetics. Applicants should send curriculum vitae, including reprints of representative publications and a statement of research objectives, and arrange to have four letters of recommendation sent to: **Chairman, Molecular Geneticist Search Committee, Department of Molecular and Population Genetics, University of Georgia, Athens, Georgia 30602.** The closing date for applications is 31 March 1984. *The University of Georgia is an Equal Opportunity/Affirmative Action Institution.*

PHYSIOLOGIST BIOCHEMIST ANATOMIST

The American University of the Caribbean, School of Medicine, located in Montserrat, British West Indies, seeks to fill positions in the Departments of Physiology, Biochemistry, and Anatomy. Main responsibility is to provide 10 to 15 hours per week of instruction to first-year medical students. Salary is competitive and commensurate with qualifications and experience. Forward résumés to: **Selection Committee, Medical Education Information Office, 100 Northwest 37 Avenue, Miami, Fla. 33125.**

POSITIONS OPEN

MICROBIOLOGIST

The Department of Energy's Biological Energy Research Program in the Office of Basic Energy Sciences is seeking a Ph.D. microbiologist with recent research experience with a strong background in physiology, biochemistry, and genetics of microorganisms and possessing a wide breadth of interests for formulating new program directions. The program strongly emphasizes fundamental research in plant and microbial sciences including energy transformations, fermentations, genetic mechanisms, and related phenomena. Candidate is expected to develop and maintain close contact with researchers in several relevant areas. The program contacts are mainly with universities, national laboratories, and other federal agencies. Position includes considerable time devoted to proposal and on-going project evaluations. United States citizenship required. Salary range for GS-15 is from \$50,252 to \$65,327. Duty Station: Headquarters Office, Germantown, Maryland. Send SF-171, application for federal employment, or direct inquiries to:

George Yourick
Office of Personnel Operations, GTN
MA-205.4
Office of Personnel
U.S. Department of Energy
Washington, D.C. 20545
Telephone: 301-353-5116

The Department of Energy is an Equal Opportunity Employer.

MICROBIOLOGY/GENETICS ASSISTANT PROFESSOR

The University of Portland seeks a Ph.D. microbiologist with training in microbial genetics and immunology to teach existing undergraduate courses in microbiology, genetics, and immunology and to develop laboratory courses in genetics and immunology. Send letter of application, curriculum vitae, evidence of teaching excellence, transcripts, and three letters of recommendation to: **Dr. Karl Wetzel, Chairman, Physical and Life Sciences, University of Portland, 5000 North Willamette Boulevard, Portland, Ore. 97203.** Application deadline is 15 March. *An Affirmative Action/Equal Opportunity Employer.*

MOLECULAR PLANT BIOLOGIST. The Department of Biology at Davidson College invites applications for a tenure-track position in molecular plant biology with an initial 2-year appointment beginning 1 August 1984. Ph.D. in molecular biology and experience with plants required; postdoctoral experience is desirable. The successful applicant will have strong commitment to both undergraduate teaching and research. Teaching duties each term are normally one course with laboratory selected from biochemistry, introductory biology, and advanced plant biology, as well as supervision of student research projects. Applications should be received by 30 March 1984. Send curriculum vitae, reprints/preprints, and four letters of reference to: **Dr. John H. Williamson, Department of Biology, Davidson College, Davidson, North Carolina 28036.** Telephone: 704-892-2000. *Equal Opportunity Employer.*

POSTDOCTORAL FELLOW, ENVIRONMENTAL PHYSIOLOGY

A postdoctoral position is available to work in areas of human environmental stress research. Ongoing research includes problems associated with physiological adaptations to heat stress, weightlessness, and aging. Future research plans include development of radioimmunoassay laboratory to combine endocrine responses with cardiovascular and thermoregulatory responses currently being measured. Send curriculum vitae and three letters of reference to: **Dr. Susan Fortney, Division of Environmental Physiology, Johns Hopkins School of Public Health, 615 North Wolfe Street, Baltimore, Maryland 21205.**

RESEARCH FACULTY POSITION AVAILABLE

The Department of Ophthalmology, University of Arizona, School of Medicine, has immediate opening for a full-time research associate professor with extensive experience in microcirculation of the choroid and retina and clinical correlation. Applicant must have at least 10 years of experience in microcirculation research and ophthalmology.

Send curriculum vitae to:

Jonathan Herschler, M.D., Professor and Head, Ophthalmology, University of Arizona Health Sciences, Tucson, Ariz. 85724.

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

MOLECULAR GENETICIST—EMBRYOLOGIST

Tenure-track position as assistant professor of poultry science. Conduct research on gene transfer and expression in avian species via retroviral transduction. Involvement in constructs, transfer, expression, and regulation as part of team in genetic engineering of farm animals. Must have Ph.D. with demonstrated expertise in molecular genetics and/or embryology. For application and more information, write to: **Dr. Edward Naber, Chairman, Department of Poultry Science, Ohio State University, 674 West Lane Avenue, Columbus, Ohio 43210,** before 1 May 1984.

NEUROPHYSIOLOGIST, a tenure-track position as an assistant/associate professor. Major teaching responsibility is in the sharing of lectures and laboratory instruction for medical and graduate students taking the course in neuroscience. Research interests should be within the area of neurobiology. Candidates for the junior position should have 2 years of postdoctoral experience that demonstrates the ability to initiate and maintain a research program. Candidates for the senior position should present evidence of a productive track record in research as an independent investigator. Laboratories are located in the new basic science building of the medical school located 38 miles north of Chicago. Send curriculum vitae and three letters of recommendation to: **Chairman, Department of Physiology and Biophysics, University of Health Sciences/The Chicago Medical School, 333 Green Bay Road, North Chicago, Ill. 60064.** *The University is an Equal Opportunity Employer.*

NUCLEAR MAGNETIC RESONANCE (NMR) SPECTROSCOPIST, University of Illinois at Chicago, Research Resources Center. A position is available for a recent Ph.D. to assist in the daily operations of the NMR laboratory for the training and advising of faculty and students in NMR spectroscopy. Collaborative research programs are encouraged. Candidates should have a strong background in NMR theory, and experience in high resolution NMR spectroscopy, electronics, and computer systems. The laboratory houses, maintains, and operates Nicolet NMC360 NB and NMC200 WB, Bruker CXP-180 and HFX-5 spectrometers. Salary commensurate with qualifications. Send curriculum vitae and two to three letters of recommendation to: **Director, Research Resources Center, University of Illinois at Chicago, Health Sciences Center, P.O. Box 6998, Chicago, Ill. 60680.** *The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer.*

PATHOLOGIST—The Institute for Cancer Research is seeking a pathologist to head a pathology laboratory that will be a resource for a variety of programs in developmental biology and oncology. Applicants should be Board-certified in anatomic pathology, knowledgeable in morphologic pathology, particularly of laboratory animals, with interest in collaborative research. Independent research will be encouraged. Staff appointment. Direct inquiries and submit evidence of research achievements and curriculum vitae to: **Chairman of the Search Committee for Pathologist, c/o Personnel Department, INSTITUTE FOR CANCER RESEARCH OF THE FOX CHASE CANCER CENTER, 7701 Burholme Avenue, Philadelphia, Pa. 19111.** *An Affirmative Action/Equal Opportunity Employer.*

PLANT BIOLOGIST. Ph.D. with postdoctoral experience in plant molecular biology or evolutionary genetics is sought for tenure-track position at the assistant professor level. A background in plant systematics desirable.

INVERTEBRATE POPULATION BIOLOGIST. Ph.D. with postdoctoral experience in invertebrate biology with interest in aquatic biology. The successful applicant will be expected to teach courses in invertebrate zoology, introductory biology, and parasitology.

The successful applicants will be expected to establish vigorous independent research programs which complement ongoing programs in the department. These positions will become available beginning 1 August 1984, subject to final budgetary approval. *In accordance with Canadian immigration regulations, preference will be given to Canadian citizens or permanent residents at the time of application.*

Interested applicants should forward an up-to-date curriculum vitae, a statement of their teaching and research interest, and arrange to have three letters of reference sent to: **Dr. A. H. Warner, Department of Biology, University of Windsor, Windsor, Ontario, Canada N9B 3P4,** by 1 April 1984.

**ASSISTANT PROFESSOR,
FOREST RESOURCES POLICY AND LAW
College of Forest Resources
University of Washington**

The College of Forest Resources, an independent college within the University of Washington, seeks qualified applicants for a permanent, tenure-track position in forest policy and law.

Responsibilities include research and teaching in the area of forest resources policy and law. Research is expected to be both scholarly and problem oriented, and to yield results of value to the field of forest resource management and the parent discipline of the incumbent. Teaching will be at both the undergraduate and graduate levels and will emphasize the application of legal/political concepts to forest resource management. The incumbent will also be expected to contribute to the new program in international trade in forest products through research and teaching dealing with trade policy.

Candidates must have:

Ph.D. or J.D. with graduate studies emphasizing disciplinary training relevant to the formulation, application, and evaluation of natural resources policy. Preferred disciplinary strengths include political science or public administration.

Other desirable qualifications include:

- 1) Graduate or undergraduate degree in forest resources or closely related discipline,
- 2) Demonstrated interest or experience in the application of political and legal concepts, theory and methods of empirical analysis to natural resources problems and policy.

Rank and Salary:

Position available 1 September 1984 or until position is filled.

Appointment at the assistant professor level. Competitive salary commensurate with qualifications and experience.

Application procedure:

Please send letter of application and résumé and request three letters of reference to be sent to:

Dr. Thomas R. Waggner
Chairman, Forest Policy Search Committee
College of Forest Resources, AR-10
University of Washington
Seattle, Washington 98195

Closing date for applications is 30 March 1984.

The University of Washington is an Equal Opportunities/Affirmative Action Employer. Qualified women and minorities are urged to apply.

**POSTDOCTORAL OPPORTUNITIES
IN BIOCHEMISTRY
AND MOLECULAR BIOLOGY**

Applications are invited for postdoctoral training positions in the Department of Biological Chemistry, Washington University School of Medicine. Training opportunities are available for selected applicants in the following areas:

Structure and function of proteins, x-ray crystallography—**L. Banaszak**

Plant genetic engineering using *Agrobacterium tumefaciens*; bacterial transcription mechanisms—**W. Barnes**

Molecular biology and enzymology of DNA replication—**P. Burgers**

Mechanical properties of cells: forces and structure which determine cell shape and allow cells to maintain shape under stress; mechanisms by which cells change shape and do work; cytoplasmic viscoelasticity—**E. Elson**

Mechanisms of chemotaxis and cell adhesion in *Dictyostelium* and the structure and function of platelet thrombospondin—**W. Frazier**

The mechanism and regulation of actin and tubulin polymerization. Kinetic studies of complex enzymes—**C. Frieden**

Mitogen-cell interaction and molecular aspects of muscle differentiation—**L. Glaser**

Regulation of genes involved in intestinal lipid metabolism, protein processing and compartmentalization, mutagenesis of cDNA's introduced into expression vectors—**J. Gordon**

Transcriptional regulation of retroviral gene expression—**J. Majors**

Genetic, biochemical, and biophysical methods for studying regulation of membrane lipid metabolism and the relation of the physical and chemical character of membrane lipid to membrane function—**D. Silbert**

Interested applicants should address inquiries either to the **Department of Biological Chemistry** or directly to the faculty member listed above at:

**Washington University School of Medicine
Department of Biological Chemistry
660 South Euclid Avenue, Box 8094
St. Louis, Missouri 63110**

Washington University is an Affirmative Action/Equal Opportunity Employer.

37th Annual Symposium on Fundamental Cancer Research

MEDIATORS IN CELL GROWTH AND DIFFERENTIATION

Sponsored by The University of Texas M. D. Anderson Hospital and Tumor Institute

March 6-9, 1984 • Houston, Texas • The Westin Galleria Hotel

This symposium will consider recent developments in the areas of the control of cell proliferation, growth factors for various cell types, and the role of soluble mediators in differentiation. Program topics include cell cycle and control of cell growth; colony stimulating factors, stem cells and hematopoiesis; growth factors for non-lymphoid cells; lymphoid growth factors; tumor growth factors; interferon; and differentiation in normal and neoplastic cells. Co-chairmen: Drs. Abby L. Maizel and Richard J. Ford.

Speakers and session chairmen include:
S. Aaronson, S. Baron, R. Baserga,
R. Bradshaw, B. Brinkley, A. Burgess,
S. Cohen, K. Dicke, R. Gallo,
E. Goldwasser, D. Gospodarowicz,
J. Gutterman, N. Iscove, P. Krammer,

L. Lachman, P. Marks, D. Medina,
M. Moore, G. Nicolson, P. Nowell,
J. Taylor-Papadimitriou, A. Pardee,
S. Pestka, R. Phillips, J. Pledger, P. Rao,
S. Rich, L. Sachs, D. Sirbasku, K. Smith,
C. Stiles, G. Todaro, J. Vilcek, E. Vitetta,
J. Watson.

Bertner Award Address: Stanley Cohen,
Vanderbilt University

Keynote Address: Robert Gallo,
National Cancer Institute

For additional information contact:

Office of Conference Services, Box 131
M. D. Anderson Hospital and Tumor
Institute
6723 Bertner Ave.
Houston, Texas 77030
(713) 792-2222

POSITIONS OPEN

PHYSIOLOGIST: Applications are being accepted for a tenure-track position in the discipline of physiology, available 1 July 1984. Applicants should possess a Ph.D. degree and the ability to teach cardiovascular, respiratory, and renal physiology. Salary is competitive and commensurate with experience. Send curriculum vitae to: **Dr. Lee Grunden, Chairman, Physiology Search Committee, College of Osteopathic Medicine of the Pacific, College Plaza, Pomona, Calif. 91766-1889.**

Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL ASSOCIATE. To study Ca^{2+} -calmodulin-cytoskeleton interaction during reception and transmission of the signal for cell differentiation and mitosis in the fungus, *Uromyces*; 2 years, \$17,500 per year; available 1 June 1984. Skills in LM, EM, video-image processing, and immunocytochemistry and knowledge of cell biology will be required. Send curriculum vitae and three letters of reference by 1 April to: **Dr. H. C. Hoch, Department of Plant Pathology, New York State Agricultural Experiment Station, Geneva, N.Y. 14456.** Cornell is an Equal Opportunity Employer.

POSTDOCTORAL/INSTRUCTOR POSITION available immediately for studying in vitro drug sensitivity stem cell assay techniques employing human tumors and carrying out clinical correlative studies. Please send curriculum vitae and three references to: **Dr. Krishna C. Agrawal, Department of Pharmacology, Tulane University School of Medicine, New Orleans, La. 70112.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION FOR REPRODUCTIVE ENDOCRINOLOGIST to study hypothalamic-pituitary and placental regulation of ovarian steroidogenesis. Experience with radioreceptor and immunoassays, column chromatography, and organ culture is required. HPLC experience is desirable. This position is available from 1 April 1984 through 30 November 1986. Applicants should submit curriculum vitae, description of research experience, and the names and addresses of three references to: **Dr. M. S. Barkley, Department of Animal Physiology, University of California, Davis, Calif. 95616.** Closing date for receipt of applications is 15 March 1984.

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

POSTDOCTORAL POSITION available to study protein phosphorylation and Ca regulation in smooth muscle. Candidates should have strong background in biochemistry. Those interested should send curriculum vitae and three letters of reference to: **Thomas M. Lincoln, Ph.D., Department of Pharmacology, School of Medicine, University of South Carolina, Columbia, S.C. 29208.** Telephone: 803-733-3258. The University of South Carolina is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available immediately for Ph.D. biochemist or equivalent to study human serum lipoproteins and apolipoproteins. Candidates should have experience in protein chemistry, including protein sequencing, amino acid analysis, and chromatographic methods; salary commensurate with experience. Send curriculum vitae, transcripts, and three letters of recommendation to: **Dr. Robert Henrikson, University of Chicago, Department of Biochemistry, 920 East 58 Street, Chicago, Ill. 60637.**

TWO POSTDOCTORAL POSITIONS available immediately for biochemist and molecular biologist to study: (i) the role of metals (metalloenzymes and metalloproteins) in the regulation and mechanism of gene expression in both prokaryotic and eukaryotic cells, (ii) mechanism of novel antitumor drugs. Send curriculum vitae and three letters of recommendation to: **Professor Felicia Wu, Department of Pharmacological Sciences, Health Sciences Center, State University of New York (SUNY) at Stony Brook, Stony Brook, N.Y. 11794.** SUNY Stony Brook is an Equal Opportunity/Affirmative Action Employer. AK Number 10-84.

POSTDOCTORAL POSITION

Research associate (postdoctoral) with background in physical oceanography or atmospheric sciences and interests in dynamical aspects of climate variability. Term of appointment: 1 year, renewable for a second year subject to the approval of the Council. Closing date: 15 March 1984. Send curriculum vitae and a list of four references to: **Director, JISAO, c/o Department of Atmospheric Sciences, AK-40, University of Washington, Seattle, Wash. 98195.**

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

POSTDOCTORAL POSITIONS available after 1 March 1984 to study: (i) control of allosteric enzymes with **Dr. R. G. Kemp** (protein chemist/enzymologist preferred); (ii) cardiac muscarinic, β -adrenergic, and adenosine receptor/adenylate cyclase interactions with **Dr. M. M. Hosey** (biochemical background preferred); (iii) membrane proteins in parasitic protozoa-macrophage interactions with **Dr. K. P. Chang**; and (iv) ontogeny, regulation, and characterization of NK/K cells with **Dr. Y. B. Kim.** New facilities, pleasant suburban location. Send résumé and names of three references to any of the above at: **3333 Green Bay Road, University of Health Sciences/Chicago Medical School, North Chicago, Ill. 60064.**

POSTDOCTORAL POSITIONS IN BIOCHEMICAL PHARMACOLOGY OF ANTICANCER AGENTS are available immediately to qualified applicants with a Ph.D. degree with a background in biochemistry, cell biology, molecular pharmacology, or molecular biology. Specific areas for research projects include the following: transport of nucleosides and their cytotoxic analogs in mammalian cells [Dr. Judith A. Belt, see *Mol. Pharmacol.* 24, 479 (1983)]; damage and repair of DNA in human cells treated with anticancer agents or radiation [Dr. Thomas P. Brent, see *Biochemistry* 22, 4507 (1983)]; biochemical characterization and detection of drug resistance in human leukemia cells; molecular pharmacology of Vinca alkaloid action [Dr. William T. Beck, see *Cancer Treat. Rep.* 67, 875 (1983)]; biochemical and genetic studies of drug induced effects on cellular proliferation and differentiation [Dr. Arnold Fridland, see *Biochem. Pharmacol.* 32, 2643 (1983)]; relation of resistance to anticancer agents of gene amplification, appearance of unique proteins, and alterations in drug flux across the cell membrane [Dr. DeWayne Roberts, see *Proc. Am. Assoc. Cancer Res.* 24, 1112 (1983)]. Applicants should indicate a specific project and send curriculum vitae and the names of three references to: **Dr. Raymond L. Blakley, Chairman, Division of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, Tenn. 38101.** An Equal Opportunity Employer.

POSTDOCTORAL POSITIONS available to study the molecular and developmental biology of cell motility and chemotaxis in the cellular slime mold *Dictyostelium discoideum*. Please send curriculum vitae and names of three references to: **Dr. David R. Soll, Department of Zoology, University of Iowa, Iowa City, Iowa 52242.** The University of Iowa is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS immediately available for studies in two areas: (i) *Biological and molecular analysis of differentiation in keratinocytes transformed by SV₄₀ and (ii) Research on human papilloma viruses.* Applicants should be recent Ph.D. or M.D. graduates with strong background in cellular/molecular biology or virology. Send letter describing present research, curriculum vitae, and names of three referees to: **Dr. Vittorio Defendi, Department of Pathology, New York University Medical Center, 550 First Avenue, New York, N.Y. 10016.** An Affirmative Action/Equal Opportunity Employer, M/F.

POSTDOCTORAL POSITION IN MOLECULAR GENETICS

Position available immediately to study recombination in mammalian cells and viruses. Research will entail cell culture, recombinant DNA, and DNA-mediated gene transfer techniques. Experience working with DNA is desirable. To inquire, send curriculum vitae to: **James R. Stringer, Ph.D., University of Cincinnati College of Medicine, Department of Microbiology and Molecular Genetics, 231 Bethesda Avenue, Cincinnati, Ohio 45267-0524.** The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION: Position available immediately for an individual who has a Ph.D. in biochemistry and at least 2 years of postdoctoral laboratory training. Experience in the purification and characterization of glycoproteins from the extracellular matrix is essential. Applicants must also be experienced in structural analysis of carbohydrates and proteins, including use of radiolabeling methods; cell culture methods; receptor analyses; immunologic assays, and contemporary methods of electrophoresis and chromatography. Salary range is \$18,000 to \$20,000. Applicants must send a complete bibliography and curriculum vitae to: **Department of Biochemistry, University of Connecticut Health Center, Farmington, Conn. 06032.** An Affirmative Action/Equal Opportunity Employer, M/W/H.

POSITIONS OPEN

POSTDOCTORAL POSITIONS available immediately. Applicants must have a background in molecular biology/protein chemistry to investigate structure/function of oncogenes, growth factors, and transforming proteins. Send curriculum vitae and two references to: **Dr. Thomas F. Deuel, Division of Hematology, Washington University School of Medicine, 216 South Kingshighway, St. Louis, Mo. 63110.**

POSTDOCTORAL POSITION available immediately to study the regulation of phosphate uptake and release in bacteria in joint program with Air Products, Inc. Candidates should have a strong background in microbiology or microbial biochemistry. Send curriculum vitae and three references to: **Dr. Harlyn O. Halvorson, Rosenstiel Center, Brandeis University, Waltham, Mass. 02254.** Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION. Ph.D. in chemistry or biochemistry to carry out transient-state and isotope exchange and related studies on enzyme mechanisms. Available immediately. Curriculum vitae and the names of three references should be sent to: **Dr. Harvey F. Fisher, University of Kansas at VA Medical Center, 4801 Linwood Boulevard, Kansas City, Mo. 64128.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately to study the role of globin RNA-protein complexes in the nucleus and cytoplasm. Recombinant DNA and DNA sequencing methods are used extensively. Send curriculum vitae and names of three references to: **Dr. Chi-Bom Chae, Department of Biochemistry, School of Medicine, University of North Carolina, Chapel Hill, N.C. 27514.** Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE

To work on biochemistry and molecular biology of the glucocorticoid receptor. Stipend negotiated on basis of experience. Send curriculum vitae and names of three references to: **Dr. Gerald Litwack, Fels Research Institute, Temple University School of Medicine, 3420 North Broad Street, Philadelphia, Pa. 19140.** An Equal Opportunity Employer.

Sigma Xi, The Scientific Research Society

There is a vacancy at the headquarters office of the Society for a **PROGRAM DEVELOPMENT OFFICER**, to assist the director of program development. Under the latter's direction, the person appointed will help to maintain and develop links between the headquarters office and the 500 chapters and clubs in North America. The appointee will also assist in the development of program activities undertaken by chapters and clubs in cooperation with headquarters, and will have a special responsibility in regard to the work of Sigma Xi's Committee on Qualifications.

Essential qualifications include broad scientific education and experience, a talent for writing, knowledge of the scientific research environments in which the Society's chapters and clubs exist, and the capacity to represent the Society and to explain its objectives and activities to both scientists and non-scientists. Desirable qualifications include membership in Sigma Xi, a record of postgraduate scientific research, and some experience of scientific organizations. The position may be of particular interest to scientists with research degrees and about 3 to 5 years of subsequent work experience. The post involves frequent travel. Salary and other benefits will be appropriate to the position and to the qualifications of the person appointed. Further information may be obtained from: **The Executive Director**, to whom applications should be submitted by 7 March 1984 (telephone: 203-624-9883 or write to: **345 Whitney Avenue, New Haven, Conn. 06511**).

RECEPTOR RESEARCH. Applications are invited for two positions to investigate the molecular properties of the nicotinic acetylcholine receptor. One position, associate research scientist, will be available September 1984 with funding for 3 years and requires a Ph.D. in biochemistry, biophysics, or chemistry, at least 2 years of postdoctoral training, and experience in protein chemistry. Also, a 2-year postdoctoral research fellowship will be available July 1984. Send curriculum vitae, bibliography, and the names of three references to: **Dr. Arthur Karlin, Department of Biochemistry, College of Physicians and Surgeons, Columbia University, 630 West 168th Street, New York, N.Y. 10032.**

Columbia University is an Equal Opportunity/Affirmative Action Employer.

PROGRAM DIRECTOR MOLECULAR IMMUNOLOGY NATIONAL CANCER INSTITUTE

The National Cancer Institute is seeking candidates for the position of Program Director in the Immunology Program of the Cancer Biology Branch, Division of Cancer Biology and Diagnosis. The incumbent will be responsible for the scientific administration of research grants and contracts. Duties will include overseeing active and competing research grants and contracts in the Molecular Immunology Section, evaluating and integrating knowledge in the area of immunology, developing and recommending plans for payment of research grants and contracts, initiating actions for support of targeted research including the development of workshops, and projecting the scientific and budgetary needs of this program area.

Applicants must have a Ph.D., M.D. degree or equivalent; minimum of three years of independent research experience as either a principal investigator or co-principal investigator on a grant or contract or equivalent experience in the management of a research laboratory at the advanced post-doctoral level; substantial experience and training in molecular immunology, preferably cancer-related. Experience in the following area is preferable: immunogenetics; transplantation genetics; molecular aspects of the synthesis, structure and function of lymphokines, antibodies and other soluble immune factors; molecular mechanisms of cytotoxicity, including mechanisms of cell-mediated and antibody-mediated lysis, and characterization of cell-surface target structures.

This is a Career Civil Service position starting at a salary of \$36,152 (GS-13) with potential for advancement to GS-14 (\$42,722). Letters of interest, Personal Qualifications (Form SF-171), curriculum vitae and bibliography should be sent by March 2, 1984 to: Dr. Faye C. Austin, National Cancer Institute, National Institutes of Health, Westwood Building, Room 10A07, Bethesda, Maryland 20205 (Call for information using 301-496-7815). An Equal Opportunity Employer.

RESEARCH SCIENTISTS

Norwich Eaton Pharmaceuticals, Inc., a wholly-owned subsidiary of the Procter & Gamble Company, is seeking experienced Ph.D.s to fill 2 positions in our R&D facility.

BIOCHEMIST/MOLECULAR BIOLOGY/ IMMUNOLOGIST

The primary responsibilities of this position will be the investigation of cell growth, differentiation and expression. The successful candidate will possess a strong background in the purification of proteins and animal cell culture. Knowledge of recombinant DNA technology would be useful but not essential.

PHARMACOLOGIST/NEUROBIOLOGIST

Candidates should have 1 to 3 years of post doctoral experience preferably in the role of calcium/calmodulin in nerve function and drug action plus an interest in the area of calcium associated CNS drug discovery research. Specific responsibilities will include designing, developing and executing studies towards the discovery and elucidation of mechanisms of action of candidate drugs.

Norwich Eaton offers a competitive employment package including paid relocation, flexible working hours, company paid health, dental and retirement benefits.

Send resume and salary requirements to
Susan M. Finch, Personnel Representative

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Waters Associates, a Division of **MILLIPORE CORPORATION** is the leading high-technology company dedicated to excellence in the science of chemical separations and analysis. Important new business opportunities have created the need for a key individual with proven leadership and project management skills with a broad marketing perspective in the area of protein purification.

The successful candidate will have marketing/business management experience dealing with products for the separation of proteins or in the utilization of such products with a strong business orientation. Qualifications include an advanced degree in Biochemistry, liquid chromatography experience, and overall familiarity with the Biotechnology market. This is a highly visible management position responsible for developing the business in a rapidly growing market area.

You'll find yourself with a sophisticated team working at the forefront of technology with the opportunity to contribute and grow with a successful business. This position offers an excellent compensation and benefits package.

You will be based close to Boston's numerous cultural and educational resources yet within easy driving distance to the four season recreational attractions of New England.

Interested candidates should send their resume in confidence to: P. Sheehan, Human Resources Department.



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34 Maple Street
Milford, MA 01757

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POSITIONS OPEN

CENTER FOR MOLECULAR MEDICINE AND IMMUNOLOGY

POSTDOCTORAL POSITIONS in tumor immunology program, emphasizing antigen characterization, radioimmunoassay, chemotherapeutic, radioimmunotherapy, and immunoliposomes, in a newly developed research center. Ph.D. applicants with experience in one or more of the following areas preferred: immunochemistry, glycoprotein chemistry, radiochemistry, lipid chemistry, and protein labeling techniques. Send curriculum vitae, summary of research interests, and names of three references to: **Dr. James Primus, Center for Molecular Medicine and Immunology, University of Medicine and Dentistry of New Jersey, 100 Bergen Street, Room 1602, Newark, New Jersey 07103.**

POSTDOCTORAL—RESEARCH ASSOCIATE POSITION available immediately to develop HPLC and other separation techniques for gut peptides. Applicant should have a Ph.D. with experience in HPLC, experience with purification and chemistry is also desirable. Applicant will also perform some small animal and in vitro studies. Send curriculum vitae to: **Peter Lee, Assistant to the Chairman, Department of Surgery, University of Texas Medical Branch (UTMB), Galveston, Texas 77550. UTMB is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH POSITION available immediately to study collagen and proteoglycan gene expression and/or the role of connective tissue in differentiation and tumor formation. Applicants should have a background in molecular biology and/or cell biology. United States citizenship required. Send curriculum vitae and three letters of reference to: **Dr. Barbara D. Smith, Collagen Research Laboratory, Veterans Administration Outpatient Clinic, 17 Court Street, Boston, Mass. 02108.**

PROFESSOR OF MICROBIOLOGY AND ENVIRONMENTAL HEALTH/DIRECTOR OF ENVIRONMENTAL HEALTH SERVICES. Senior position combines a regular academic appointment entailing instruction and research with an administrative appointment responsible for management of environmental health services. Position is approximately 50 percent academic and 50 percent administrative. Incumbent will teach undergraduate and graduate courses in microbiology or environmental health and conduct research in the Department of Microbiology and Environmental Health. Administrative responsibilities consist of heading a staff of six persons responsible for a program of environmental health and safety designed to minimize hazards and risk of injury at the university, including coordination of activities to assure compliance with relevant federal and state laws, coordination of handling and disposition of hazardous and radioactive materials, and administration of worker's compensation program.

Candidates must have an earned doctorate in a discipline appropriate to a faculty of microbiologists and environmental health specialists. Professional training and experience in microbiology, industrial hygiene, toxicology, or biohazard control are preferred. Demonstrated abilities in teaching and research. Knowledge and experience in one and preferably several areas of the responsibilities of the administrative position. Managerial competency and ingenuity; abilities in communication and human relations.

Submit letter speaking to each qualification described above, curriculum vitae, and names of three references to reach: **Dr. Roy M. Buchan, Institute of Rural Environmental Health, Veterinary Sciences Building, Colorado State University, Fort Collins, Colorado 80523, by 30 April 1984.**

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PULMONARY PHYSIOLOGIST

Leading Pulmonary Department is seeking a pulmonary or exercise physiologist to supervise the activities of a very busy, totally computerized pulmonary laboratory with an extremely active research program. Applicant must have interest in pulmonary, exercise, or muscle physiology as it relates to the respiratory system in humans. At least 3 years of experience and demonstrated managerial ability. Emphasis will be in the areas of quality control, research and staff development. Mount Sinai Medical Center, a progressive 700-bed teaching hospital located in Miami Beach is affiliated with the University of Miami. Salary commensurate with experience, excellent benefits. For consideration, please call or write to: **William M. Abraham, Ph.D., Associate Director of Research, Division of Pulmonary Disease, Pulmonary Department, Mount Sinai Medical Center, 4300 Alton Road, Miami Beach, Florida 33140. Telephone: 305-674-2790.**

POSITIONS OPEN

PHARMACOLOGIST—Unusual and challenging opportunity for a highly motivated individual with broad interests and experience in detection, development, and evaluation of medicinally active compounds and natural product samples offered by an internationally known service research organization having nearly 200 clients in more than 15 countries and a pharmacology staff of nearly 100 scientists and technicians. Position offers excellent salary, benefits package, stock options, management future, and requires some travel. Please contact: **Dr. M. H. Pindell, President, Panlabs, Inc., P.O. Box P, Sunapee, N.H. 03782.**

POSTDOCTORAL RESIDENCY POSITION available in a clinical immunology laboratory providing training and experience in all of the specialty areas of medical laboratory immunology. Please send curriculum vitae and three letters of recommendation to: **Ronald J. Harbeck, Ph.D., Division of Clinical Laboratory Investigation, National Jewish Hospital/National Asthma Center, 3800 East Colfax Avenue, Denver, Colo. 80206. An Affirmative Action/Equal Opportunity Employer.**

REGIONAL ENVIRONMENTAL MANAGEMENT SPECIALIST

The U.S. Agency for International Development (U.S.A.I.D.) is seeking an individual to serve as regional environmental management specialist for the Andean region on a 2-year personal services contract. Position is based in Lima, Peru, and involves substantial travel throughout the region. Main responsibilities include advising missions on environmental aspects of development activities. Minimum qualifications include master's degree in environmental planning or closely related field, 3 years of relevant experience, and fluency in Spanish. Send résumé or SF-171 by 23 March 1984 to: **James S. Hester, Chief Environmental Officer, LAC/DR Room 2252—N.S., Agency for International Development, Washington, D.C. 20523. U.S.A.I.D. is an Equal Opportunity Employer.**

RESEARCH AGRONOMIST/PLANT PHYSIOLOGIST with the Forage and Range Research Unit, U.S. Department of Agriculture—Agricultural Research Service (USDA/ARS) on the University of Nebraska—East Campus, Lincoln, Nebraska. Career Federal Service. Candidate conducts research on undesirable plants of native and cultivated grasslands of the Central Great Plains with emphasis on their basic biology and vulnerability to control measures. Ph.D. desirable. Salary: GS-11/12 (\$25,366 to \$39,519), based on qualifications and experience. For applications: **Dr. Kenneth Vogel, USDA/ARS-B86, 322 Keim Hall, University of Nebraska—East Campus, Lincoln, Neb. 68583. Telephone: 402-472-1564.** Candidates must be U.S. citizens. *An Equal Opportunity Employer.*

RESEARCH ASSOCIATE/POSTDOCTORAL—Position available for persons with training in molecular cloning of genes to participate in a program of malaria research. Send curriculum vitae and telephone numbers of three references to: **Dr. A. Kilejian, The Public Health Research Institute, 455 First Avenue, New York, N.Y. 10016.**

An Equal Opportunity Employer

RESEARCH ASSOCIATE with Ph.D. in immunology or immunology/microbiology; postdoctoral experience preferred. Basic and clinical research to define the mechanisms of ocular inflammation and immunoregulation. Experience in antigen purification, cell fractionation, and hybridoma technology is preferred. Opportunity or independent research available. Send curriculum vitae and three letters of reference to: **Henry J. Kaplan, M.D., Department of Ophthalmology, Emory University, 1365 Clifton Road, NE, Atlanta, Georgia 30322. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW. Position available for a virologist, a biochemist, or molecular biologist to join an ongoing study of two medically important plus-stranded RNA viruses (flaviviruses). Work will focus on cDNA cloning, immunological identification of cloned gene products, DNA sequence analysis of the genes for the major coat proteins, identification of antigenic determinants that are important in virus neutralization, and efficient bioproduction of viral antigens in recombinant microorganisms. Salary: \$17,500 to \$22,000, commensurate with experience. Send résumé and names of three references to: **Dr. Maurice J. Fournier or Dr. Thomas L. Mason, Department of Biochemistry, University of Massachusetts, Amherst, Mass. 01003 by 1 May 1984. An Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

RESEARCH ASSISTANT: A full time and permanent research position is available in an academic environment. Duties consist of working with DNA, carcinogens, and enzymes; running enzymatic reactions; working with organic synthesis, instrumental analysis, liquid scintillation counting and all modes of chromatography; analysis of reaction products by high-pressure liquid chromatography, nuclear magnetic resonance spectrometry, electrophoresis, and regular column chromatography; preparing solutions; ordering and maintaining inventory of laboratory chemicals and laboratory maintenance; \$14,000 per year to start. Requires B.S. in chemistry or biochemistry. Send résumé to: **7310 Woodward Avenue, Room 415, Detroit, Michigan 48202; refer to number 0884. Employer paid ad.**

RESEARCH ASSOCIATE. Postdoctoral position available immediately for individual with strong background in enzymology and endocrinology to carry out purification of enzymatic activities involved in posttranslational processing of prohormones. Send curriculum vitae and three letters of recommendation before 30 March 1984 to: **Dr. B. A. Eipper, Department of Neuroscience, The Johns Hopkins University School of Medicine, 725 North Wolfe Street, Baltimore, Md. 21205. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH DIRECTOR, DEPARTMENT OF ANESTHESIOLOGY. Applications are invited for the position of director of research for a large and active department. This is a full-time position available for associate professor or above. Ph.D. desired but D.V.M./Ph.D. or M.D./Ph.D. will be considered. Candidate should demonstrate area of interest relevant to anesthesiology and high potential for developing independent extramural funded research. Willingness to develop and direct basic and clinical faculty research essential. Excellent facilities and personnel available. Salary negotiable. Send curriculum vitae and three references to: **Noel W. Lawson, M.D., Chairman, Search Committee, Department of Anesthesiology, E-91, University of Texas Medical Branch, Galveston, Texas 77550-2778. An Affirmative Action/Equal Opportunity Employer.**

A RESEARCH FACULTY APPOINTMENT (associate or assistant professor) is available in the Section of Experimental Oncology at the University of Utah. The position involves collaboration with faculty studying tumor biology and investigating the biological effects of therapeutic agents (hyperthermia, ionizing irradiation, anticancer drugs) at the molecular, cellular and whole-animal levels as well as conducting human clinical trials on the interactions of hyperthermia and x-irradiation. The successful applicant will have demonstrated experience with such agents in studies with in vitro mammalian cell models or in vitro/in vivo animal tumor models. Experience with flow cytometry and/or centrifugal elutriation is also desirable. The candidate is expected to either have or acquire partial independent research support which will complement the current interests of the multidisciplinary faculty. Applicants should send a curriculum vitae and the names and addresses of three references by 1 April 1984 to: **Dr. Lyle A. Dethlefsen, Section of Experimental Oncology, Division of Radiation Oncology, Department of Radiology, University of Utah Medical Center, Salt Lake City, Utah 84132.** Applications received after the deadline may be accepted if no qualified candidate has been identified.

An Equal Opportunity/Affirmative Action Employer

RESEARCH IMMUNOLOGIST

The Huntington Memorial Hospital Liver Center is seeking applications for a research position. The successful candidate will participate in ongoing projects on hepatitis B virus and liver diseases, and must have demonstrated ability to initiate and sustain independent research programs. The laboratory is equipped with an EPICS V flow cytometer, as well as a tissue culture laboratory with support facilities. The research team is also engaged in studies on HBV-DNA integration and both clinical and laboratory studies are being conducted with interferon and anticancer drugs.

Applicants should have at least 2 years of postdoctoral experience. Salary is commensurate with training and experience.

Send curriculum vitae, brief statement of research interests, and names of three references to:

**Myron J. Tong, Ph.D., M.D.,
Huntington Memorial Hospital
Liver Center
100 Congress Street
Pasadena, Calif. 91109-7013
Equal Opportunity Employer, M/F**

Senior Scientists

ImmuCell is a new company which is developing monoclonal antibody based products for the diagnosis and prevention of human and animal infectious diseases. We are currently seeking two creative, energetic scientists to develop products for the diagnosis of bacterial and viral infections and for the detection of drug residues. These individuals will have the opportunity to build an interdisciplinary R and D group in a stimulating and dynamic environment.

Microbiologist, Ph.D.

Two to four years postdoctoral experience in isolation and immunological characterization of microbial surface antigens. Requires familiarity with hybridoma and non-isotopic immunoassay technologies.

Immunochemist, Ph.D.

Two to four years of postdoctoral experience in development of non-isotopic immunoassay systems for cell surface antigens and/or therapeutic drugs. Previous work in chemical modification of proteins and hapten conjugation helpful.

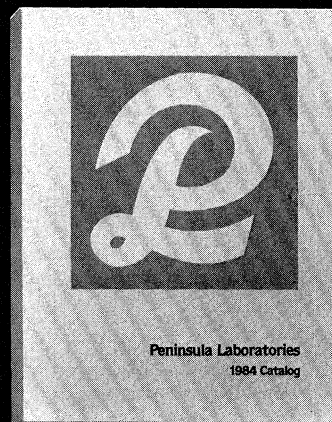
These positions offer an attractive compensation program and the opportunity for significant equity participation.

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Dr. Frank E. Ruch, Jr.
Research and Development Director
ImmuCell Corporation
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Scientists

Medicinal Analytical Chemistry

Genentech, Inc., an expanding international leader in Genetic Engineering needs three scientists with PhDs in Biochemistry or Chemistry and at least 2 years Post-Doctoral experience to strengthen our Medicinal and Analytical Group and be responsible for coordination and support of analytical and characterization aspects of at least one product through the government submissions required for a New Drug Application (NDA). In addition, these self-motivated individuals must have expertise in the following areas:

Scientist-Analytical Separation

You will have proven creative ability to conceive, implement and optimize methods of analytical protein separation and characterization. Familiarity with a broad range of current methods, including electrophoresis, chromatography (LC + HPLC), blotting techniques, affinity techniques, etc., is required. (#1003).

Scientist-Medicinal

Be involved in the analysis of the in vivo and receptor mediated degradation products of pharmacologically active proteins by radiotracer methodology. Optimize in vivo radiolabeling of rDNA derived products, purification and characterization of same; analyze body fluids for intact and fragmented product and define degradative pathway(s) and organ(s) responsible. (#1002).

Scientist-Carbohydrate Lipid

Candidates should be familiar with modern biochemical techniques such as GC/Mass spectrometry, SDS-PAGE, HPLC, affinity chromatography, use of enzymatic methods of carbohydrate analysis, and in vitro labeling of carbohydrate moieties. (#1004).

We offer competitive salaries and excellent benefits including equity participation opportunities. Please send resume to Human Resources Department, with reference number, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. Genentech is an equal opportunity employer.

Genentech, Inc.
Genentech, Inc.

POSITIONS OPEN

RESEARCH ASSOCIATE position in agronomy. Ph.D. or equivalent with training in maize genetics and morphogenesis of the corn kernel. Candidate will conduct research on genetic control of endosperm and embryo development in the maize kernel. Experience in B-A translocation stocks and their applications essential; knowledge of microcomputer programming/operation desirable. Full time; salary: \$16,500. Send application to: **Missouri Division of Employment Security, Attention: Connie Souden, 421 East Dunklin, Jefferson City, Missouri 65104, Reference: Job Number 253612. An Equal Opportunity Employer.**

RESEARCH SCIENTIST, Ph.D.—Lovelace Medical Foundation has an opening for a Ph.D., cell biologist/biochemist to conduct research on using cell fusion techniques for developing cell lines of medical importance. Send résumés to: **Lovelace Medical Foundation, Human Resources Department, 5400 Gibson, SE, Albuquerque, New Mexico 87108.**

An Equal Opportunity/Affirmative Action Employer, M/F/H/V

SCIENTIFIC INFORMATION RESEARCHER

Must have background in life sciences with library and computer research skills. Will coordinate the operation of scientific information center under direction of the heads of three national antivivisection societies. Will develop computer data base of information on research involving use of live animals. Send résumé and salary requirements to:

Suite 204, Noble Plaza
801 Old York Road
Jenkintown, Pa. 19046

The Australian Museum, SCIENTIFIC OFFICER (CURATOR) OF BIRDS OR MAMMALS. Position Number 83/11; \$17,846 to \$39,374. The successful applicant will be expected to oversee the curation of the mammal or bird collections, answer public and professional scientific inquiries, participate in the Museum's display and education programs, and carry out an active program of research. **ESSENTIAL:** University degree in zoology with research experience in an appropriate field. A wide knowledge of mammalian or avian biology and taxonomy. Further details from: **Dr. H. G. Cogger, (02) 339-8111.** Application to: **The Staff Clerk, The Australian Museum, 6-8 College Street, Sydney, Australia, by 10 April 1984.**

SENIOR SCIENTIST/DIRECTOR. NPI, a plant research and products company established in 1973, invites applications for a senior research/management position in our expanded laboratory divisions. Research experience is plant genetics of physiological cell biology is essential. Interest in the application of cellular and molecular biology approaches to plant improvement is desired. Duties will include management of accelerated plant research programs in phytochemistry, nutrition, cellular and molecular biology. Pursuit of personal research objectives will be highly encouraged.

NPI offers a strong corporate history in product development and commitment to long-term plant research objectives. Compensation and benefit packages are commensurate with experience. Applicants should send their curriculum vitae, current publication list, and statement of interests to: **Vice-President Corporate Planning, NPI, University Research Park, 417 Wakara Way, Salt Lake City, Utah 84108.**

SENIOR RESEARCH SCIENTISTS (Ocular Effects of Laser Radiation)

System Research Laboratories (SRL) is seeking senior scientists to conduct research in San Antonio, Texas, for a Department of Defense customer on the ocular effects of laser radiation on subhuman primates. Each position requires two or more years of post-Ph.D. research experience in investigating the ocular effects of laser radiation on primates using either behavioral, physiological, electrophysiological, biophysical or biochemical measures, and a degree in one of the following areas: (i) visual physiology/electrophysiology/experimental psychology; (ii) biophysics or physical chemistry; and (iii) laser physics. We are also looking for research assistants and technicians with similar experience. If you would like to be a member of this research program, send your résumé in confidence to:

T. P. Ryan
Scientific and Engineering Recruiting
Department SC
Systems Research Laboratories, Inc.
2800 Indian Ripple Road
Dayton, Ohio 45440

POSITIONS OPEN

VETERINARY ANATOMIST. Assistant professorship, 1 July 1984, at Iowa State University for Ph.D. or D.V.M.-M.S. Participation in teaching, preferably in gross anatomy, and development of independent research program or active collaboration in current research are expected. Salary commensurate with qualifications. Send résumé and three letters of recommendation to: **Dr. Jeanine Carithers, Department of Veterinary Anatomy, Iowa State University, Ames, Iowa 50011, before 15 March 1984. Iowa State University is an Equal Opportunity/Affirmative Action Employer.**

VIROLOGIST

Bioassay Systems Corporation is an exciting biotechnology company with an energetic research and development program in medical diagnostics. We are seeking a qualified candidate with a Ph.D. in virology or related science and experience in infectious or sexually transmitted diseases. Industry experience in diagnostic product development. Please send résumé to:

Mark Bear, Ph.D.
Director Cell Culture Services
Bioassay Systems Corporation
Woburn, Mass. 01801

Ph.D./M.D. VIROLOGIST

The Division of Viral Diseases, Centers for Disease Control (CDC), Atlanta, invites applications for a staff position to head the enterovirus laboratory. Applicants should have at least 3 years of postdoctoral training with a strong background and research experience in virology (preferably with picornaviruses). The responsibilities of the position include development of an active research program in the rapid diagnosis, characterization, immunology, and molecular biology of enterovirus and supervision of the reference diagnostic laboratory. *CDC is an Equal Opportunity Employer.* Salary will be commensurate with training and experience. Applicants should send curriculum vitae, brief summary of research interest and experience, and names of three references to: **Louise M. Griggs, Personal Management, Centers for Disease Control, Atlanta, Ga. 30333.**

CONVOCATION

THE ERNEST WITEBSKY CENTER FOR IMMUNOLOGY will present the **9TH INTERNATIONAL CONVOCATION ON IMMUNOLOGY** at the Buffalo, New York, Marriott Inn, 25 to 28 June 1984, on the theme **ANTIBODIES: PROTECTIVE, DESTRUCTIVE AND REGULATORY ROLE.** Sessions will focus on: production and function of antibodies; protective role of antibodies; antibodies to foreign cells; antibodies to neoplastic cells; regulatory mechanisms; autoantibodies; allergy; immune complexes; and administration of antibodies for prevention and therapy. Contact: **James F. Mohn, M.D., 210 Sherman Hall, State University of New York, Buffalo, N.Y. 14214; telephone: 716-831-2848.**

PROGRAM

CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain a doctor of optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **The Dean of Admissions, The New England College of Optometry, Room 201, 424 Beacon Street, Boston, Mass. 02115.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP IN MOLECULAR NEUROBIOLOGY

Friedrich Miescher-Institut, Basel, Switzerland Applications are invited for an internally funded fellowship, of 3 years maximum duration, to work on the expression of neuron-specific proteins in developing brain using recombinant DNA techniques. A good training and demonstrated ability in molecular biology are required. The institute provides outstanding facilities in a purely research environment. Inquiries should be addressed to: **Dr. A. Matus, Friedrich Miescher-Institut, P.O. Box 2543, CH-4002 Basel, Switzerland.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS FOR RESEARCH TRAINING IN HYPERTENSION AND CARDIOVASCULAR DISEASE. NIH postdoctoral fellowships starting 1 July 1983 are available for qualified applicants with the M.D. or Ph.D. degree as part of a multidisciplinary training program. Applicants must possess U.S. citizenship or permanent resident status. Possible areas for intensive research experience include: biochemical, physiological, pathological, and epidemiological studies on the cardiac, renal, adrenal, and neural components of vascular regulation. For further information, write to: **Dr. R. L. Soffer, Departments of Biochemistry and Medicine, Cornell University Medical College, 1300 York Avenue, New York, New York 10021. An Equal Opportunity/Affirmative Action Employer.**

CHARLES H. REVSON FOUNDATION AND NORMAN AND ROSITA WINSTON FOUNDATION FELLOWSHIPS in basic biomedical research are available at Cornell University Medical College in the following areas: (i) to work with Dr. Alton Meister on biochemical and molecular biology of amino acids and peptides, (ii) to work with Dr. Carl G. Becker on mechanisms of inflammation and immune regulation, (iii) to work with Dr. Gregory W. Siskind on regulation of the immune responses, and (iv) to work with Dr. Olaf S. Andersen on problems of iron permeability in reconstituted lipid bilayers. Holders of M.D. or Ph.D. degrees are invited to apply for 2-year fellowships with competitive salaries. Applicants should generally have no more than 3 years of basic or clinical experience beyond the doctorate. Send curriculum vitae and three references to: **The Office of Research and Sponsored Programs, Cornell University Medical College, 1300 York Avenue, Room A-131, New York, N.Y. 10021.**

POSTDOCTORAL FELLOWSHIP IN IMMUNOLOGY. Available July 1984 to study immunology of herpes simplex virus with emphasis on recurrent ocular infections. Background in cellular immunology or biochemical and molecular aspects of viruses desirable. Applicants must possess U.S. citizenship or permanent resident status. Send curriculum vitae and names of three references to: **Roberta Meyers-Elliott, Ph.D., Jules Stein Eye Institute, University of California, Los Angeles, School of Medicine, Los Angeles, Calif. 90024. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL FELLOWSHIP available for biochemist with interest in one or more of the following: immunochemistry, tissue culture or protein purification. Available immediately. Send résumé to:

Dr. Jeffrey A. Nisker
Victoria Hospital
Colborne 3
London, Ontario, Canada N6A 4G5

COURSES

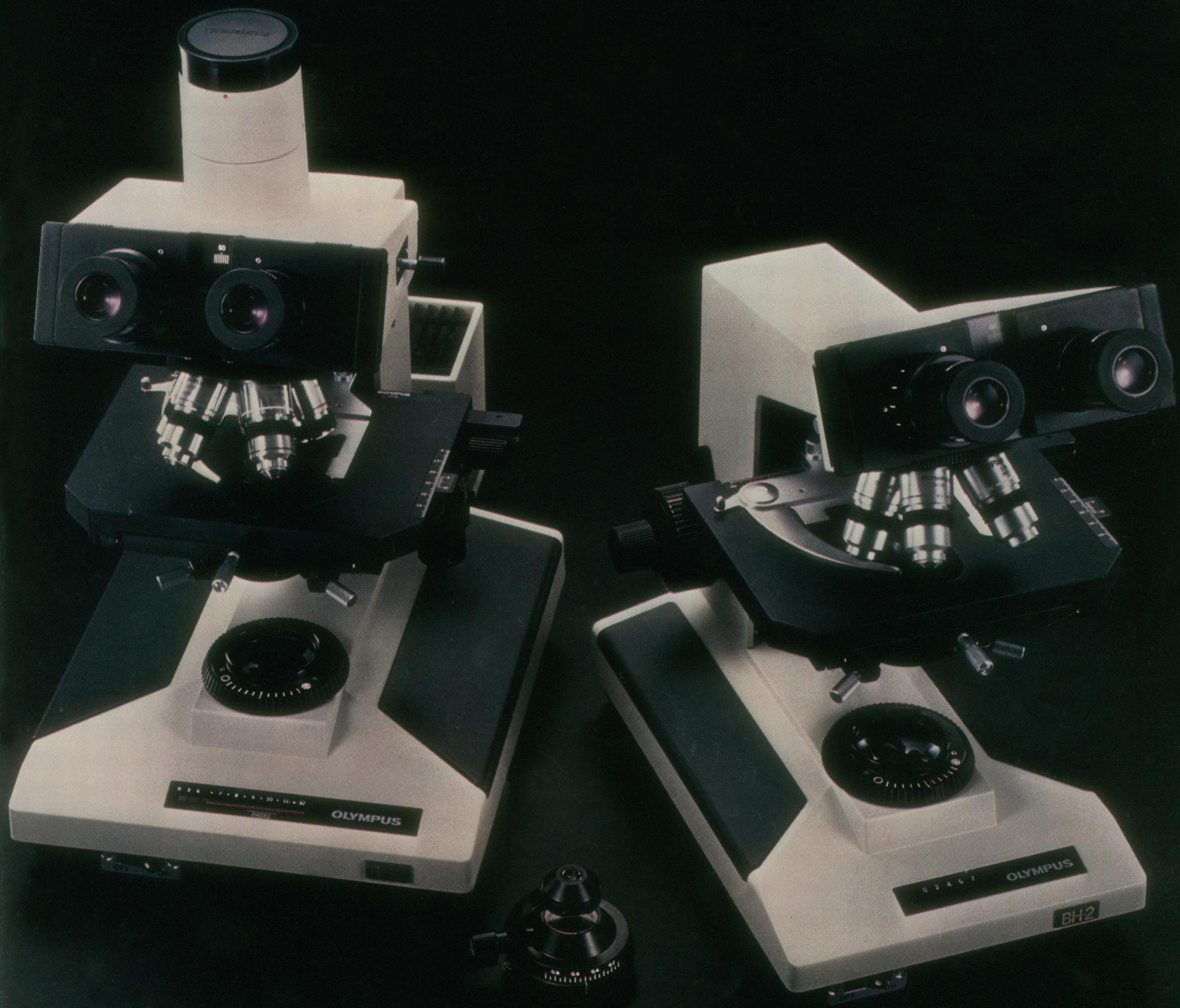
MEDICAL GENETICS: 1984, Washington, D.C., 10 to 12 May. Three-day course designed for scientists and physicians interested in an intensive review of recent advances in basic and clinical aspects of genetics. The course will also serve as a review for the Boards in Medical Genetics. Organized by the members of the NIH Inter-Institute Genetics Program; a syllabus will be distributed. For information, contact: **FAES, NIH, Building 10, Room B1-L-101; Bethesda, Md. 20205; telephone: 301-496-7976.**

The Florida Medical Entomology Laboratory (FMEL) of the University of Florida will offer from 4 to 13 June 1984 an intensive, graduate-level course entitled **TOPICS IN MEDICAL ENTOMOLOGY.** The course will feature lectures, demonstrations, and field exercises on the ecology, behavior, genetics, biochemistry, and vectorial capacity of medically important arthropods. For more information contact: **The Director, FMEL, 200 9th Street, SE, Vero Beach, Florida 32962.**

MARKETPLACE

CRISIS IN SPACE, by W. J. Carmouche, enunciates the non-inertial phenomenon within celestial bodies, and describes its impact on the sciences. **REVELATION PRESS, P.O. Box 80141, Baton Rouge, La. 70898-0141. 1983, 127 pp., illus., \$24.**

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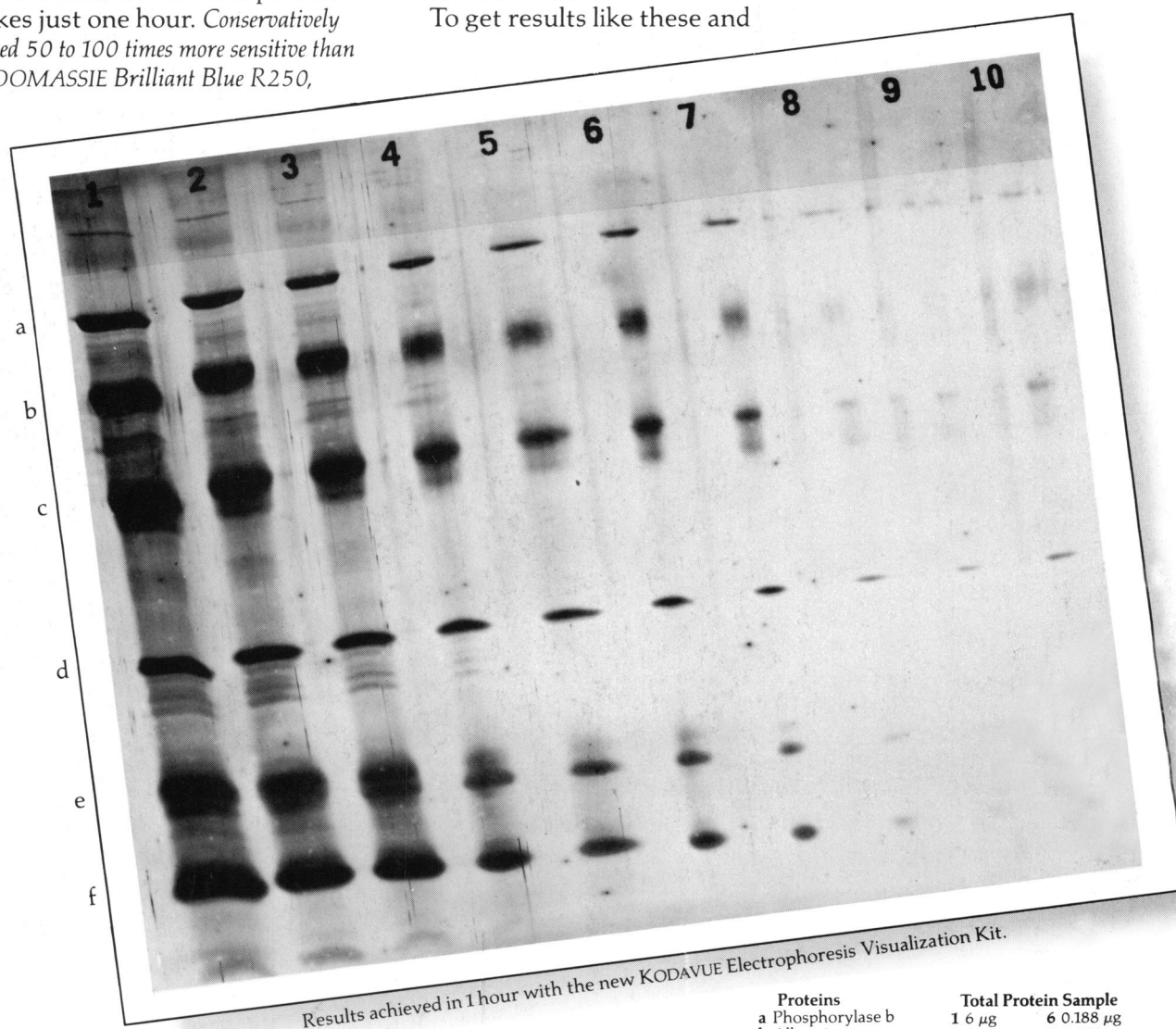
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