

sion of research on this subject in the past ten years.

Some of the papers are interesting samples of the authors' work that lead the reader to extensive results published elsewhere. Others are comprehensive works themselves. One example of the latter is a paper by Hansen, Lacis, Rind, Russell, Stone, Fung, Ruedy, and Lerner, which is by far the longest paper in the volume. It presents results of extensive experiments in which a general circulation model of the atmosphere was used to test the relative importance of many feedback mechanisms. In addition, it presents new theoretical work that adds greatly to our understanding of the transient response, the rate of change of climate in response to, say, increasing atmospheric carbon dioxide. The two next longest papers in the book, by Rind and Barry *et al.*, also use the general circulation model to test feedbacks. These three papers illustrate the utility of theoretical computer models for the study of a system that is not amenable to actual physical experiments.

Some of the other papers present analyses of data on past climate change. Such analysis is another important technique for the study of feedbacks. With actual data, however, it is much more difficult, and impossible in many cases, to isolate the important feedback mechanisms and test their relative importance, since all are acting at once.

The book is a necessity for anyone actively engaged in or contemplating research on climate change.

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## Early Towns of Europe

**Farms, Villages, and Cities.** Commerce and Urban Origins in Late Prehistoric Europe. PETER S. WELLS. Cornell University Press, Ithaca, N.Y., 1984. 271 pp., illus. \$32.50; paper, \$14.95.

The author of this book draws on the wealth of archeological publications on the late prehistory of central Europe (approximately 1000 B.C. to A.D. 1000) to formulate his main thesis, that exchange and commerce were decisive factors in the establishment of the early towns of Europe beyond the Mediterranean world.

During the Roman Empire (A.D. 0 to 400) classical societies were also in existence north of the Alps, and these influ-

enced deeply the medieval development of the area of study. Wells rightly stresses the continuity between the Iron Age and subsequent periods but devotes only 20 pages of the book to the first millennium A.D. This is clearly the weakest part of the work. The archeological material of that period, much of which is from richly furnished graves, lends itself to consideration of social hierarchies and of contacts between princes and magnates. Though it is more difficult to understand the economic basis of the lifeways of the major groups of society, information on the subsistence economy is actually very rich for the first millennium A.D., though less easily accessible. A study of this material might have led the author to consider more seriously factors other than commerce in the development especially of those towns that continued after A.D. 1000. In particular, local marketing, craft production, religious institutions, and administration come into focus for such successful centers, most of which, unlike the Iron Age towns, have survived till present times.

The author's specialty is the early Iron Age, about 800 to 400 B.C., and this and the following phase are treated in much detail. Against a late Bronze Age background a thorough presentation is given of the interesting archeological material, arranged according to major themes such as manufacturing or distribution of wealth. The author painstakingly translates the information into a text that reads quite well though full of scholarly terms and references to localities of finds. We also hear of things more meaningful to the unprepared reader, like the princely town-fortress of Heuneburg in southern Germany, which traded with the Greek colony at Marseille. In a chapter on the later development an account of the impressive Celtic town of Manching, also in southern Germany, is presented. This site traded with Roman Italy in the dynamic period just before the legions marched into the region. Wells stresses the intermediate phase of raiding and migrations that took the Celts, for instance, to Delphi in Greece, where they sacked the famous temple of the oracle, and to Rome itself in search of booty and fame.

The author is poised between two traditions of archeological research. The first is a continental European one, characterized by firm control of the evidence and providing the specialist literature but less dynamic and imaginative when it comes to social and economic interpretation of the data. The other is a newer, English-American tradition that seeks to interpret archeological finds in terms of

social change. Oriented toward social anthropology, this tradition has, as its basic weakness, difficulties in coming to grips with historical reality, particularly with diversity. In the present case we note the reverence of the author for the European, mainly German, scholarship. Yet one would have liked to see the data from this tradition studied more deeply, rather than only summarized within a framework derived from the other tradition.

Clearly Wells's intention has been to produce a book useful for the reader who is seeking acquaintance with the problems of early European society. To this end the work is lavishly furnished with illustrations and has a long (59 pages) bibliography. All in all Wells has done a fine job of summarizing in a scholarly manner interesting archeological evidence much of which is for the first time made available in English.

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## Books Received

**Abstracts and Indexes in Science and Technology.** A Descriptive Guide. Dolores B. Owen. 2nd ed. Scarecrow Press, Metuchen, N.J., 1985. xvi, 235 pp. \$17.50.

**Acceptable Risks.** Pascal James Imperato and Greg Mitchell. Viking, New York, 1985. xxii, 286 pp., illus. \$15.95.

**Aging and Technological Advances.** Pauline K. Robinson *et al.*, Eds. Plenum, New York, 1984. xii, 468 pp., illus. \$69.50. NATO Conference Series III, vol. 24. From a symposium, Los Angeles, Aug. 1983.

**Agricultural Chemistry.** B. A. Yagodin, Ed. Mir, Moscow, 1984 (U.S. distributor, Imported Publications, Chicago). Two volumes. 375 pp., illus., and 384 pp., illus. \$16.95. Translated from the Russian edition (Moscow, 1982) by V. G. Vopyan.

**The Alaskan Beaufort Sea. Ecosystems and Environments.** Peter W. Barnes, Donald M. Schell, and Erk Reimnitz, Eds. Academic Press, Orlando, Fla., 1984. xvi, 466 pp., illus. \$39.

**The Amazon. Limnology and Landscape Ecology of a Mighty Tropical River and Its Basin.** Harald Sioli, Ed. Junk, Dordrecht, Netherlands, 1984 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xiv, 763 pp., illus. \$172. Monographiae Biologicae, vol. 56.

**Analytical Methods for Pesticides and Plant Growth Regulators.** Vol. 13, Synthetic Pyrethroids and Other Pesticides. Gunter Zweig and Joseph Sherma, Eds. Academic Press, Orlando, Fla., 1984. xviii, 312 pp., illus. \$65.

**Annual Review of Entomology.** Vol. 30. Thomas E. Mittler, Frank J. Radovsky, and Vincent H. Resh, Eds. Annual Reviews, Palo Alto, Calif., 1985. x, 492 pp., illus. \$27.

**Annual Review of Fluid Mechanics.** Vol. 17. Milton Van Dyke, J. V. Wehausen, and John L. Lumley, Eds. Annual Reviews, Palo Alto, Calif., 1985. x, 630 pp., illus. \$28.

**Antennas and Waveguides for Nonsinusoidal Waves.** Henning F. Harmuth. Academic Press, Orlando, Fla., 1984. xii, 276 pp., illus. \$60. Advances in Electronics and Electron Physics, Supplement 15.

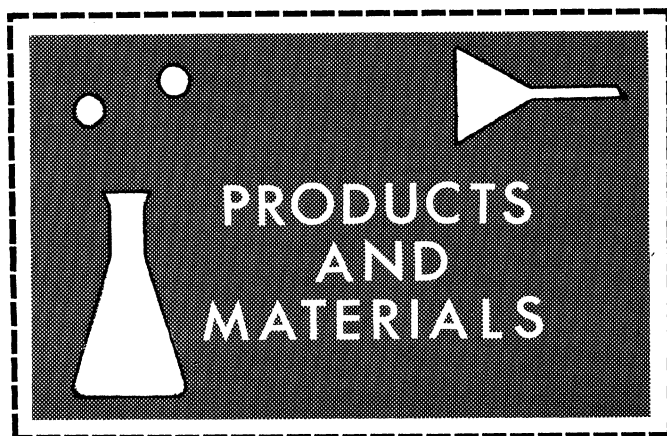
**Anti-Zufall. Die Gesetzmässigkeit der Evolution biologischer Systeme.** Ernest Schoffeniels. Hirzel, Stuttgart, 1984. 152 pp., illus. Paper, DM 28. Translated from the French edition (Paris, 1975) by Hainfried E. A. Schenk.

**The Archaeology of Shirley Plantation.** Theodore R. Reinhart, Ed. University Press of Virginia, Charlottesville, 1985. xii, 226 pp., illus. \$13.95.

**Die Art in Raum und Zeit.** Das Artkonzept in der

- Biologie und Paläontologie. Rainer Willmann. Paul Parey, Berlin, 1985. 208 pp., illus. DM 42.
- Asymmetric Synthesis.** Vol. 3, Stereodifferentiating Addition Reactions, Part B. James D. Morrison, Ed. Academic Press, Orlando, Fla., 1984. xiv, 578 pp., illus. \$69.50.
- The Auditory Brainstem Response.** John T. Jacobson, Ed. College-Hill Press, San Diego, Calif., 1985. xii, 444 pp., illus. \$39.50.
- BASIC Aerodynamics.** C. B. Stribling. Butterworth, Boston, 1984. xii, 163 pp., illus. Paper, \$15.95. Butterworths BASIC Series.
- BASIC in Action.** Stanislav Dvořák and Anthony Musset. Butterworth, Boston, 1984. xii, 291 pp., illus. Paper, \$29.95. Butterworth BASIC Books.
- Basic Plasma Physics II.** A. A. Galeev and R. N. Sudan, Eds. North-Holland, New York, 1984. xiv, 850 pp., illus. \$161.50.
- Beauty and the Beast.** The Coevolution of Plants and Animals. Susan Grant. Illustrations by Laszlo Kubinyi. Scribner, New York, 1985. viii, 215 pp. \$14.95.
- Bibliography of Repeat Photography for Evaluating Landscape Change.** Garry F. Rogers, Harold E. Malde, and Raymond M. Turner. University of Utah Press, Salt Lake City, 1984. xxxvi, 179 pp., illus. \$12.50.
- The Biochemistry and Physiology of the Lemon and Other Citrus Fruits.** Walton B. Sinclair. University of California Division of Agriculture and Natural Resources, Oakland, 1984. xvi, 946 pp., illus. \$55.
- Biogeography of the Tropical Pacific.** Frank J. Radovsky, Peter H. Raven, and S. H. Sohmer, Eds. Association of Systematics Collections, Lawrence, Kans., and Bernice P. Bishop Museum, Honolulu, 1984. x, 221 pp., illus. \$45; paper, \$35. Bishop Museum Special Publication no. 72. From a symposium, Honolulu, May 1982.
- Biological, Biochemical, and Biomedical Aspects of Actinomycetes.** Librado Ortiz-Ortiz, Luis F. Bojalil, and Veronica Yakoleff, Eds. Academic Press, Orlando, Fla., 1984. xvi, 643 pp., illus. \$49.50. From a symposium, Oaxtepec, Morelos, Mexico, Aug. 1982.
- Biological Macromolecules and Assemblies.** Vol. 2, Nucleic Acids and Interactive Proteins. Frances A. Jurnak and Alexander McPherson, Eds. Wiley-Interscience, New York, 1985. xii, 508 pp., illus. \$74.95.
- The Biosynthesis of Polysaccharides.** R. W. Stodart. Macmillan, New York, 1984. xii, 354 pp., illus. \$44.50.
- The Birds of the Republic of Panamá.** Part 4, Passeriformes: Hirundinidae (Swallows) to Fringillidae (Finches). Alexander Wetmore, Roger F. Pasquier, and Storrs L. Olson. Smithsonian Institution Press, Washington, D.C., 1984. vi, 670 pp., illus. \$29.95. Smithsonian Miscellaneous Collections, vol. 150, part A.
- Calcium Entry Blockers and Tissue Protection.** Theophile Godfraind *et al.*, eds. Raven, New York, 1985. xiv, 261 pp., illus. \$42.
- California Riparian Systems.** Ecology, Conservation, and Productive Management. Richard E. Warner and Kathleen M. Hendrix, Eds. University of California Press, Berkeley, 1985. xxx, 1035 pp., illus. \$75; paper, \$30. From a conference, Davis, Calif., Sept. 1981.
- Central Nervous System Plasticity and Repair.** A. Bignami *et al.*, Eds. Raven, New York, 1985. xiv, 184 pp., illus. \$39. From a meeting.
- Chemistry.** Definitions, Notions, Terminology. A. I. Busev and I. P. Efimov. Mir, Moscow, 1984 (U.S. distributor, Imported Publications, Chicago). 296 pp., illus. \$7.95. Translated from the Russian edition (Moscow, 1981) by V. A. Sipachev.
- Chemistry.** The Central Science. Theodore L. Brown and H. Eugene LeMay, Jr. 3rd ed. Prentice-Hall, Englewood Cliffs, N.J., 1985. xxii, 893 pp., illus., + appendix. \$35.95.
- Children of the Forest.** Kevin Duffy. Dodd, Mead, New York, 1985. xiv, 177 pp., illus. \$14.95.
- Classical, Discrete Spin Models.** Symmetry, Duality and Renormalization. Hendrik Moraa. Springer-Verlag, New York, 1984. viii, 251 pp., illus. Paper, \$11. Lecture Notes in Physics, vol. 214.
- Clinical Pharmacology of Cardiac Antiarrhythmic Agents.** Classical and Current Concepts Reevaluated. Oscar B. Garfein, Ed. New York Academy of Sciences, New York, 1984. x, 323 pp., illus. Paper, \$85. Annals of the New York Academy of Sciences, vol. 432. From a conference, New York, Oct. 1983.
- Coal Science.** Vol. 3 Martin L. Gorbaty, John W. Larsen, and Irving Wender, Eds. Academic Press, Orlando, Fla., 1984. xiv, 350 pp., illus. \$90.
- The Colonisation of Land.** Origins and Adaptations of Terrestrial Animals. Colin Little. Cambridge University Press, New York, 1984. viii, 290 pp., illus. \$99.50.
- Computational Methods for Fluid Flow.** Roger Peyret and Thomas D. Taylor. Springer-Verlag, New York, 1985. x, 358 pp., illus. Paper, \$22. Springer Series in Computational Physics.
- Computational Methods of Neutron Transport.** E. E. Lewis and W. F. Miller, Jr. Wiley-Interscience, New York, 1984. xviii, 401 pp., illus. \$44.95.
- Computer Software.** A Scientific American Book. Freeman, New York, 1985. viii, 124 pp., illus. Paper, \$13.95.
- Computers and Control in Clinical Medicine.** Ewart R. Carson and Derek G. Cramp, Eds. Plenum, New York, 1985. x, 263 pp., illus. \$39.50.
- Concise Science Dictionary.** Oxford University Press, New York, 1984. vi, 762 pp., illus. \$22.50.
- Contaminant Effects on Fisheries.** Victor W. Cairns, Peter V. Hodson, and Jerome O. Nriagu, Eds. Wiley-Interscience, New York, 1984. xviii, 333 pp., illus. \$69.95. Advances in Environmental Science and Technology, vol. 16.
- The Control of Fish Migration.** R. J. F. Smith. Springer-Verlag, New York, 1985. xvi, 243 pp., illus. \$49.50. Zoophysiology, vol. 17.
- Controlled Wildlife.** A Three-Volume Guide to U.S. Wildlife Laws and Permit Procedures. Vol. 1, Federal Permit Procedures. Carol Estes and Keith W. Sessions, Eds. Association of Systematics Collections, Lawrence, Kans., 1984. viii, 304 pp. Paper, \$55.
- Cortical Integration.** Basic, Archicortical, and Cortical Association Levels of Neural Integration. Fernando Reinoso-Suárez and Cosimo Ajmone-Marsan, Eds. Raven, New York, 1984. xiv, 440 pp., illus. \$90. International Brain Research Organization Monograph Series, vol. 11. From a symposium, Toledo, Spain, April 1983.
- The Cytoskeleton.** Cellular Architecture and Choreography. Alice Fulton. Chapman and Hall (Methuen), New York, 1984. 80 pp., illus. Paper, \$6.95. Outline Studies in Biology.
- Developments in Numerical and Experimental Methods Applied to Tribology.** D. Dowson *et al.*, Eds. Butterworth, Boston, 1984. viii, 329 pp., illus. \$109.95. From a symposium, Lyon, France, Sept. 1983.
- The Disposal of High-Level Radioactive Waste 1984.** A Comparative Analysis of the State-of-the-Art in Selected Countries. Frank L. Parker, Robert E. Broshears, and Janos Pasztor. Beijer Institute (Royal Swedish Academy of Sciences), Stockholm, 1984. Two volumes. iv, 116 pp., and 209 pp. Paper.
- The Effects on the Atmosphere of a Major Nuclear Exchange.** National Academy Press, Washington, D.C., 1985. x, 193 pp., illus. Paper, \$14.50.
- The Electronic Structure of Complex Systems.** P. Phariseau and W. M. Temmerman, Eds., Plenum, New York, 1984. viii, 803 pp., illus. \$120. NATO ASI Series B, vol. 113. From an institute, Ghent, Belgium, July 1982.
- The Electrophysiology of Intellectual Functions.** Duilio Giannitrapani. Karger, Basel, 1985. xvi, 247 pp., illus. \$98.25.
- Elements of Simulation.** Byron J. T. Morgan. Chapman and Hall (Methuen), New York, 1984. xiv, 351 pp., illus. \$55; paper, \$18.95.
- Endocrine Toxicology.** John A. Thomas, Kenneth S. Korach, and John A. McLachlan, Eds. Raven, New York, 1985. x, 404 pp., illus. \$69.50. Target Organ Toxicology Series.
- Enumeration and Design.** David M. Jackson and Scott A. Vanstone, Eds. Academic Press, Orlando, Fla., 1984. x, 317 pp. \$39.50.
- The Enzymes of Biological Membranes.** Vol. 1, Membrane Structure and Dynamics. Anthony N. Martonosi, Ed. 2nd ed. Plenum, New York, 1985. xxii, 451 pp., illus. \$59.50.
- EXAFS and Near Edge Structure III.** K. O. Hodgson, B. Hedman, and J. E. Penner-Hahn, Eds. Springer-Verlag, New York, 1984. xvi, 533 pp., illus. \$34.50. Springer Proceedings in Physics, vol. 2. From a conference, Stanford, Calif., July 1984.
- The Experimental Biology of Bryophytes.** A. F. Dyer and J. G. Duckett, Eds. Academic Press, Orlando, Fla., 1984. xviii, 281 pp., illus. \$68.50. Experimental Botany.
- Experimental Design in Psychological Research.** Allen L. Edwards. 5th ed. Harper and Row, New York, 1984. xxiv, 584 pp., illus. \$33.50.
- Expert Systems.** Principles and Case Studies. Richard Forsyth, Ed. Chapman and Hall (Methuen), New York, 1984. xii, 231 pp., illus. \$39.95; paper, \$19.95.
- Field Guide to Soils and the Environment.** Applications of Soil Surveys. Gerald W. Olson. Chapman and Hall (Methuen), New York, 1984. xviii, 219 pp., illus. \$49.99; paper, \$18.95. Environmental Resource Management Series. A Dowden and Culver Book.
- FrAGRANCE.** The Story of Perfume from Cleopatra to Chanel. Edwin T. Morris. Scribner, New York, 1985. xvi, 304 pp., illus. \$24.95.
- Fundamentals of Human-Computer Interaction.** Andrew Monk, Ed. Academic Press, Orlando, Fla., 1984. xviii, 293 pp., illus. \$26.50. Computers and People Series.
- Gauge Interactions.** Theory and Experiment. Antonino Zichichi, Ed. Plenum, New York, 1984. xii, 799 pp., illus. \$120. The Subnuclear Series, 20. From a school, Erice, Italy, Aug. 1982.
- Gene Manipulation in Plant Improvement.** J. P. Gustafson, Ed. Plenum, New York, 1984. xii, 668 pp., illus. \$75. From a symposium, Columbia, Mo., 1984.
- Genetic and Phenotypic Markers of Tumors.** Stuart A. Aaronson, Luigi Frati, and Roberto Verna, Eds. Plenum, New York, 1984. xii, 379 pp., illus. \$62.50. From a meeting, Rome, Oct. 1983.
- Glass: Science and Technology.** Vol. 2, Processing I. D. R. Uhlmann and N. J. Kreidl, Eds. Academic Press, Orlando, Fla., 1984. xii, 360 pp., illus. \$74.50.
- Gorillas in the Mist.** Dian Fossey. Houghton Mifflin, Boston, 1984. xxiv, 326 pp., illus., + plates. Paper, \$10.95. Reprint, 1983 ed.
- Gravitation, Geometry and Relativistic Physics.** Springer-Verlag, New York, 1984. vi, 336 pp., illus. Paper, \$16. Lecture Notes in Physics, vol. 212. From a conference, Aussois, France, May 1984.
- The Handbook of Environmental Chemistry.** O. Hutzinger, Ed. Vol. 2, Part C, Reactions and Processes. A.-S. Allard *et al.* Springer-Verlag, New York, 1985. xiv, 145 pp., illus. \$36.
- Handbook of Neurochemistry.** Vol. 8, Neurochemical Systems. Abel Lajtha, Ed. 2nd ed. Plenum, New York, 1985. xxviii, 671 pp., illus. \$89.50.
- Handbook of Ozone Technology and Applications.** Vol. 2, Ozone for Drinking Water Treatment. Rip G. Rice and Aharon Netzer, Eds. Butterworth, Boston, 1984. xiv, 378 pp., illus. \$59.95. An Ann Arbor Science Book.
- Hepatology.** A Festschrift for Hans Popper. Harald Brunner and Heribert Thaler, Eds. Raven, New York, 1985. xx, 382 pp., illus. \$85. Falk Symposium No. 39. From a symposium, Vienna, Oct. 1983.
- Heterogeneous Reactor Design.** Hong H. Lee. Butterworth, Boston, 1985. xiv, 519 pp., illus. \$42.95. Butterworths Series in Chemical Engineering.
- Human Evolution.** An Illustrated Introduction. Roger Lewin. Freeman, New York, 1985. viii, 104 pp. \$27.95; paper, \$14.95.
- An Idiot's Fugitive Essays on Science.** Methods, Criticism, Training, Circumstances. C. Truesdell. Springer-Verlag, New York, 1984. xviii, 654 pp., illus. \$58.
- Idiotypy in Biology and Medicine.** Heinz Köhler, Jacques Urbain, and Pierre-André Cazenave, Eds. Academic Press, Orlando, Fla., 1984. xxii, 445 pp., illus. \$78.
- Immune Intervention.** Vol. 1, New Trends in Vaccines. Ivan M. Roitt, Ed. Academic Press, Orlando, Fla., 1984. xii, 145 pp., illus. \$27.50.
- Information and Medicine.** The Nature of Medical Descriptions. Marsden S. Blois. University of California Press, Berkeley, 1984. xiv, 298 pp. \$27.50.
- Infrared and Millimeter Waves.** Vol. 12, Electromagnetic Waves in Matter, Part II. Kenneth J. Button, Ed. Academic Press, Orlando, Fla., 1984. xvi, 323 pp., illus. \$69.
- Infrastructure.** Maintenance and Repair of Public Works. Alan H. Molof and Carl J. Turkstra, Eds. New York Academy of Sciences, New York, 1984. viii, 370 pp., illus. Paper, \$74. Annals of the New York Academy of Sciences, vol. 431. From a symposium, Dec. 1983.
- Innovations in the Water and Wastewater Fields.** E. A. Glysson, D. E. Swan, and E. J. Way, Eds. Butterworth, Boston, 1985. x, 266 pp., illus. \$34.95. An Ann Arbor Science Book. From a seminar, Ann Arbor, Mich., Feb. 1983.
- The Interpretation of Ecological Data.** A Primer on Classification and Ordination. E. C. Pielou. Wiley-Interscience, New York, 1984. xiv, 263 pp., illus. \$32.50.
- An Introduction to Experimental Design in Psychology.** A Case Approach. Robert L. Solso and Homer H. Johnson. 3rd ed. Harper and Row, New York, 1984. xiv, 285 pp., illus. Paper, \$14.95.
- Introduction to Laser Physics.** Koichi Shimoda. Springer-Verlag, New York, 1984. x, 211 pp., illus. \$25. Springer Series in Optical Sciences, vol. 44. Translated from the Japanese edition (Tokyo, 1983).
- Introduction to Logic Programming.** Christopher John Hogger. Academic Press, Orlando, Fla., 1984. xiv, 280 pp., illus. \$46. A.P.I.C. Studies in Data Processing, vol. 21.
- Laser Applications.** Vol. 5. John F. Ready and Robert K. Erf, Eds. Academic Press, Orlando, Fla., 1984. xii, 314 pp., illus. \$62.
- Learning.** A Survey of Psychological Interpretations. Winfred F. Hill. 4th ed. Harper and Row, New York, 1985. xiv, 242 pp. Paper, \$13.50.
- The Lichen-Forming Fungi.** David L. Hawksworth and David J. Hill. Blackie, Glasgow, 1984 (U.S. distributor, Methuen, New York). viii, 158 pp., illus. \$35; paper, \$16.95. Tertiary Level Biology.
- Light and the Flowering Process.** Daphne Vince-Prue, Bryan Thomas, and K. E. Cockshull, Eds. Academic Press, Orlando, Fla., 1984. xxii, 301 pp., illus. \$27.50. From a symposium, Littlehampton, England, Sept. 1983.

(Continued on page 761)



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### Pertussis Toxin

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### Literature

*Mechanical CAD System* features a design, drafting, engineering, and manufacturing software system for research or production. Harris, Computer Systems Division. Circle 558.

*Freeze Drying* brochure introduces the Supermodulyo and Modulyo units. Edwards High Vacuum. Circle 594.

*Optics* offers electro-optical and optical-mechanical apparatus and equipment. Physitec. Circle 595.

*Riboprobe Gemini* describes reagents for RNA synthesis. Promega Biotec. Circle 596.

*Fluorescence Instrumentation* features spectrofluorometers, spectrophotometers, and accessories. SLM Instruments. Circle 597.

*Labware* lists a full line of plastic laboratory containers and apparatus. Nalge. Circle 598.

*Streptavidin Applications Guide* describes technology and details applications for the detection of nucleic acids. Bethesda Research Laboratories. Circle 600.

## AAAS NEWS

(Continued from page 709)

quest of Argentina's National Commission on Disappeared Persons. This spring, the Association worked with the Medical School of the National University of Buenos Aires and the Human Rights Office of the Argentine Ministry of the Interior, to sponsor a 6-week training workshop in forensic sciences.

Hamburg and AAAS president-elect Gerard Piel presented Alfonsin with a certificate of membership in the Association and a letter commending the Argentine president for his record in advancing the cause of science and upholding human rights. The award and reception were planned and carried out by James W. Rowe, AAAS project director for Western Hemisphere Cooperation.

In addition to Hamburg and Piel, Alfonsin was greeted by former AAAS Board chairs Emilio Q. Daddario, Edward E. David, Jr., H. Bentley Glass, Mina Rees, and Leonard M. Rieser.

## Obituaries

**Santiago E. Aguerrevere** of Caracas, Venezuela, member of Section E since 1931, 15 November 1984.

**Charles Norman Barnum** of Charlotte, North Carolina, member of Section M since 1943, 4 February 1985.

**Bryon R. Clark** of Cincinnati, Ohio, member of Section N since 1967, 2 January 1985.

**Sidney P. Colowick**, Department of Microbiology, Vanderbilt University School of Medicine, member of Section G since 1963, 2 January 1985.

**Robert Davies** of Seattle, Washington, member of Section N since 1971, 23 January 1985.

**Stephen Doba, Jr.**, of Red Bank, New Jersey, member of Section M since 1960, 27 December 1984.

**W. H. Earle** of Phoenix, Arizona, member of Section G since 1979, 15 December 1984.

**Ernest N. Fergus** of Lexington, Kentucky, member of Section O since 1921, 3 January 1985.

**G. S. Fraenkel**, Department of Entomology, University of Illinois, member of Section G since 1957, 27 October 1984.

**Sterling D. Garrard** of Concord, Massachusetts, member of Section N since 1957, 4 December 1984.

**Frank Gerbode** of San Francisco, California, member of Section N since 1948, 6 December 1984.

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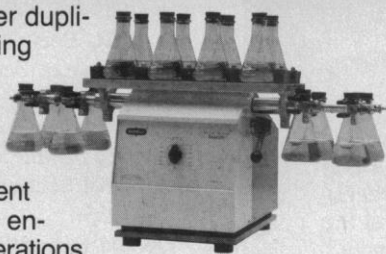


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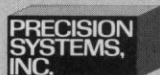
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**William L. Hart** of La Jolla, California, member of Section A since 1931, 16 December 1984.

**Emanuel Herzon** of Elgin, Illinois, member of Section N since 1951, 23 November 1984.

**Gertrude W. Hineline** of Devon, Pennsylvania, member of Section G since 1919, 9 January 1985.

**Charles Hodge 4th**, professor emeritus, Temple University, member of Section G since 1929, 7 February 1985.

**Linn Hoover**, deputy for international science programs, U.S. Geological Survey, member of Section E since 1963, 8 February 1985.

**Richard H. Hultman** of Racine, Wisconsin, member of Section G since 1951, 26 December 1984.

**John D. Johannesen** of Saint Charles, Illinois, member of Section M since 1968, 7 October 1984.

**C. A. Johnson** of Lemmon, South Dakota, member of Section N since 1972, 22 December 1984.

**Robert H. Kean** of Alexandria, Virginia, member since 1963, 16 January 1985.

**Robert A. Kuehne**, Department of Zoology, University of Kentucky, member of Section G since 1963, 18 December 1984.

**Carl J. Marienfeld** of Ashland, Missouri, member of Section N since 1952, 6 January 1985.

**Robert Mitchell** of New Concord, Ohio, member of Section C since 1930, 11 November 1984.

**Nora M. Mohler** of Warren, Maine, member of Section B since 1929, 29 November 1984.

**Frank Oppenheimer**, director, The Exploratorium, San Francisco, member of Section B since 1977, 4 February 1985.

**Tibor Polgar**, technical and scientific director, Environmental Systems, Martin Marietta, member since 1973, 21 January 1985.

**John R. Reeves** of Boca Raton, Florida, member of Section C since 1929, 13 January 1985.

**Vera D. Rubin**, Research Institute for the Study of Man, Columbia University, member of Section H since 1983, 6 February 1985.

**Donald E. Smith**, professor of chemistry, Northwestern University, member of Section C since 1964, 9 January 1985.

**Frank H. Spedding**, Ames Laboratory, member of Section C since 1953, 15 December 1984.

**William Frederick Windle** of Granville, Ohio, member of Section N since 1924, 20 February 1985.

**William Wokoun**, BW Research Laboratories, Inc., member of Section J since 1969, 29 November 1984.

## BOOKS RECEIVED

(Continued from page 714)

**Macrolide Antibiotics.** Chemistry, Biology, and Practice. Satoshi Omura, Ed. Academic Press, Orlando, Fla., 1984. xvi, 635 pp., illus. \$89.50.

**Magnetic Resonance in Medicine and Biology.** M.-A. Hopf and F. W. Smith, Eds. Karger, Basel, 1984. viii, 180 pp., illus. \$98.25. Progress in Nuclear Medicine, vol. 8. From a symposium, Geneva, Oct. 1983.

**Maintenance of Microorganisms.** A Manual of Laboratory Methods. B. E. Kirsop and J. J. S. Snell, Eds. Academic Press, Orlando, Fla., 1984. x, 207 pp., illus. \$20.

**Médecine, Science et Technique.** Recueil d'Etudes Rédigées à l'Occasion du Centenaire de la Mort de Claude Bernard (1813-1878). Charles Marx, Ed. Editions du Centre National de la Recherche Scientifique, Paris, 1984. 130 pp. Paper, 60 F. Fondements des Sciences.

**Medicine, Science, and Society.** Symposia Celebrating the Harvard Medical School Bicentennial. (Boston, Oct. 1982.) Kurt J. Isselbacher, Ed. Wiley, New York, 1984. xxii, 746 pp., illus. \$75.

**Microcomputers in Biology.** A Practical Approach. C. R. Ireland and S. P. Long, Eds. IRL Press, Washington, D.C., 1984. xii, 324 pp., illus. Paper, \$27. Practical Approach Series.

**Mineral Resources.** A World Review. John A. Wolfe. Chapman and Hall (Methuen), New York, 1984. xvi, 293 pp., illus. \$33; paper, \$18.95. Environmental Resource Management Series.

**Molecular Basis of Aging.** A. K. Roy and B. Chatterjee, Eds. Academic Press, Orlando, Fla., 1984. x, 400 pp., illus. \$29.50. From a symposium, Rochester, Mich., Nov. 1983.

**Moment Formation in Solids.** W. J. L. Buyers, Ed. Plenum, New York, 1984. xiv, 336 pp., illus. \$49.50. NATO ASI Series B, vol. 117. From an institute, Vancouver Island, Canada, Aug. 1983.

**Multiple Diffraction of X-Rays in Crystals.** Shih-Lin Chang. Springer-Verlag, New York, 1984. xii, 300 pp., illus. \$49.50. Springer Series in Solid-State Sciences, 50.

**Multiple Sclerosis.** Present and Future. G. Scarlato and W. B. Matthews, Eds. Plenum, New York, 1984. viii, 265 pp., illus. \$49.50. Ettore Majorana International Science Series (Life Sciences), vol. 16. From a workshop, Erice, Italy, Sept. 1983.

**Neurobiology of Learning and Memory.** Gary Lynch, James L. McGaugh, and Norman M. Weinberger, Eds. Guilford, New York, 1984. xiv, 528 pp., illus. \$65. From a conference, Irvine, Calif.

**Neuropsychology of Memory.** Larry R. Squire and Nelson Butters, Eds. Guilford, New York, 1984. xvi, 655 pp., illus. \$65.

**Neurotransmitters, Seizures, and Epilepsy II.** Ruggero G. Fariello *et al.*, Eds. Raven, New York, 1984. xx, 371 pp., illus. \$57.50. From a workshop, San Antonio, Tex., April 1983.

**New Applications of Data Bases.** G. Gardarin and E. Gelenbe, Eds. Academic Press, Orlando, Fla., 1984. xii, 273 pp., illus. \$25. From a workshop, Cambridge, England, Sept. 1983.

**New Computer Architectures.** J. Tiberghien, Ed. Academic Press, Orlando, Fla., 1984. xiv, 289 pp., illus. \$28.50. International Lecture Series in Computer Science.

**The Node of Ranvier.** Joy C. Zaboren and Sergey Fedoroff, Eds. Academic Press, Orlando, Fla., 1984. xiv, 392 pp., illus. \$69. Cellular Neurobiology.

**Northern Ecology and Resource Management.** Memorial Essays Honouring Don Gill. Rod Olson, Ross Hastings, and Frank Geddes, Eds. University of Alberta Press, Edmonton, Canada, 1984. xviii, 438 pp., illus. \$22.50.

**On Mars.** Exploration of the Red Planet, 1958-1978. Edward Clinton Ezell and Linda Neuman Ezell. National Aeronautics and Space Administration, Washington, D.C., 1984 (available from the Superintendent of Documents, Washington, D.C.). xvi, 539 pp., illus. \$20. The NASA History Series. NASA SP-4212.

**Pathochemical Markers in Major Psychoses.** H. Beckmann and P. Riederer, Eds. Springer-Verlag, New York, 1985. x, 158 pp., illus. \$27.50.

**Phase Equilibria in Chemical Engineering.** Stanley M. Walas. Butterworth, Boston, 1985. xvi, 671 pp., illus. \$49.95.

**Phospholipids in the Nervous System.** Vol. 2, Physiological Roles. Lloyd A. Horrocks, Julian N. Kanfer, and Giuseppe Porcellati, Eds. Raven, New York, 1984. xviii, 358 pp., illus. \$62.50. From a symposium.

**The Physics Disk.** Sheridan Simon. Prentice-Hall, Englewood Cliffs, N.J., 1985. vi, 74 pp. + disk. Spiral bound, \$29.95.

**Plant Histochemistry and Cytochemistry.** An Introduction. Peter B. Gahan. Academic Press, Orlando, Fla., 1984. xii, 301 pp., illus. \$41.50. Experimental Botany.

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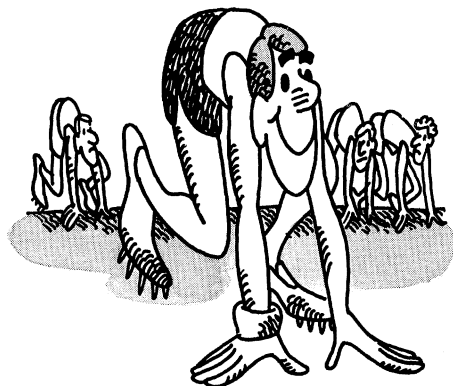
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**Plant-Microbe Interactions.** Molecular and Genetic Perspectives. Vol. 1. Tsune Kosuge and Eugene W. Nester, Eds. Macmillan, New York, and Collier Macmillan, London, 1984. xii, 444 pp., illus. \$38.

**Pollution Control for Agriculture.** Raymond C. Loehr. 2nd ed. Academic Press, Orlando, Fla., 1984. xviii, 467 pp., illus. \$44.

**Polymers, Liquid Crystals, and Low-Dimensional Solids.** Norman March and Mario Tosi, Eds. Plenum, New York, 1984. xx, 628 pp., illus. \$89.50. Physics of Solids and Liquids.

**Population and Biology.** Bridge between Disciplines. Nathan Keyfitz, Ed. Ordina Editions, Liege, Belgium, 1984. viii, 318 pp., illus. Paper, \$25. From a conference, Cambridge, Mass., Feb. 1981.

**The Prevention of Nuclear War.** A United Nations Perspective. William Epstein. Oelgeschlager, Gunn and Hain, Cambridge, Mass., 1984. vi, 114 pp. \$20.

**Progress in Graph Theory.** J. Adrian Bondy and U. S. R. Murty, Eds. Academic Press, Orlando, Fla., 1984. xiv, 539 pp., illus. \$59.50. From a conference, Waterloo, Canada, 1982.

**Proletarianization and Family History.** David Levine, Ed. Academic Press, Orlando, Fla., 1984. xii, 318 pp. \$49.50. Studies in Social Discontinuity. From a symposium, New Brunswick, N.J., May 1983.

**Prostacyclin.** Clinical Trials. Richard J. Gryglewski, Andrew Szczeklik, and John C. McGiff, Eds. Raven, New York, 1984. xvi, 143 pp., illus. \$34.50.

**Prostaglandins and Leukotrienes.** Blood and Vascular Cell Function. Jonathan M. Gerrard. Dekker, New York, 1985. xiv, 320 pp., illus. \$65. Hematology, vol. 1.

**Protecting Personnel at Hazardous Waste Sites.** Steven P. Levine and William F. Martin, Eds. Butterworth, Boston, 1985. xviii, 366 pp., illus. \$24.95.

**Questions and Problems in General Physics.** I. V. Savelyev. Mir, Moscow, 1984 (U.S. distributor, Imported Publications, Chicago). 304 pp., illus. \$8.95. Translated from the Russian edition (Moscow, 1982) by G. Leib.

**Recent Advances in Systemic Lupus Erythematosus.** P. H. Lambert, L. Perrin, and S. Izui, Eds. Academic Press, Orlando, Fla., 1984. xviii, 359 pp., illus. \$35. From a symposium, Geneva, Sept. 1983.

**Recent Trends in Mortality Analysis.** Kenneth G. Manton and Eric Stallard. Academic Press, Orlando, Fla., 1984. x, 344 pp., illus. \$50. Studies in Population.

**Resonances.** Models and Phenomena. S. Alberverio, L. S. Ferreira, and L. Streit, Eds. Springer-Verlag, New York, 1984. vi, 359 pp., illus. Paper, \$18. Lecture Notes in Physics, vol. 211. From a workshop, Bielefeld, Germany, April 1984.

**The Reticuloendothelial System.** A Comprehensive Treatise. Herman Friedman, Mario Escobar, and Sherwood M. Reichard, Eds. Vol. 7B, Physiology. Sherwood M. Reichard and James P. Filkins, Eds. Plenum, New York, 1985. xxvi, 533 pp. \$79.50.

**The Role of the Gastrointestinal Tract in Nutrient Delivery.** Morris Green and H. L. Greene, Eds. Academic Press, Orlando, Fla., 1984. xviii, 290 pp., illus. \$29. Bristol-Myers Nutrition Symposia, vol. 3. From a symposium, Washington, D.C., Dec. 1983.

**Science.** Its History and Development among the World's Cultures. Colina A. Ronan. Facts On File, New York, 1984. 543 pp., illus. Paper, \$14.95. Reprint, 1982 edition.

**Science and Technology for International Development.** An Assessment of U.S. Policies and Programs. Robert P. Morgan. Westview, Boulder, Colo., 1985. xiv, 160 pp. Paper, \$16.95.

**The Science Digest Book of Halley's Comet.** John Tullis. Avon, New York, 1985. 136 pp., illus., + plates. Paper, \$9.95.

**The Science of Animals That Serve Humanity.** John R. Campbell and John F. Lasley. 2nd ed. McGraw-Hill, New York, 1985. xx, 834 pp., illus., + index. \$37.95. McGraw-Hill Publications in the Agricultural Sciences.

**A Scientist at the Seashore.** James Trefil. Illustrations by Gloria Walters. Scribner, New York, 1985. xii, 208 pp. \$14.95.

**Secretion and Action of Gonadotropins.** Physiology and Clinic. B. Runnebaum et al., Eds. Springer-Verlag, New York, 1984. vi, 96 pp., illus. Paper, \$18.

**Seeds.** Physiology of Development and Germination. J. Derek Bewley and Michael Black. Plenum, New York, 1985. xiv, 367 pp., illus. \$45.

**Selected Topics in Algebra.** And Its Interrelations with Logic, Number Theory and Algebraic Geometry. Ionel Bucur. Editura Academiei, Bucharest, Romania, and Reidel, Boston, 1984 (distributor, Kluwer, Hingham, Mass.). viii, 406 pp. \$79. Mathematics and Its Applications (East European Series). Translated from the Romanian edition (Bucharest, 1980) by Mihnea Moroianu.

**Self-Organization.** Autowaves and Structures Far from Equilibrium. V. I. Krinsky, Ed. Springer-

Verlag, New York, 1984. xii, 263 pp., illus. \$34. Springer Series in Synergetics, 28. From a symposium, Pushchino, U.S.S.R., July 1983.

**Sister Chromatid Exchanges.** 25 Years of Experimental Research. Raymond R. Tice and Alexander Hollaender, Eds. Plenum, New York, 1984. Two volumes. Part A, The Nature of SCEs. xviii, 492 pp., illus., + appendices. \$75. Part B, Genetic Toxicology and Human Studies. xviii pp. + pp. 493-1033, illus. \$75. Basic Life Sciences, Vol. 29. From a symposium, Upton, N.Y., Dec. 1983.

**Size and Scaling in Primate Biology.** William L. Jungers, Ed. Plenum, New York, 1985. xvi, 491 pp., illus. \$69.50. Advances in Primatology.

**The Small Business Computer.** Today and Tomorrow. William E. Grieb, Jr. Baen Book, New York, 1984 (distributor, Simon and Schuster, New York). 288 pp., illus. Paper, \$6.95.

**Solid Residues from Coal Use.** Disposal and Utilization. David R. Cope and Peter W. Dacey. IEA Coal Research, London, 1984. xviii, 154 pp., illus. Paper, £50.

**Spacelab.** Research in Earth Orbit. David Shapland and Michael Rycroft. Cambridge University Press, New York, 1984. 192 pp., illus. \$29.95.

**Space Weapons.** The Arms Control Dilemma. Bhupendra Jasani, Ed. Published for SIPRI by Taylor and Francis, Philadelphia, 1984. xiv, 255 pp., illus. \$36. From a symposium, Stockholm, Sept. 1983.

**Special Functions.** Group Theoretical Aspects and Applications. R. A. Askey, T. H. Koornwinder, and W. Schempp, Eds. Reidel, Boston, 1984 (distributor, Kluwer, Hingham, Mass.). xxxiv, 311 pp. \$49.50. Mathematics and Its Applications.

**Specificity in Biological Interactions.** C. Chagas and B. Pullman, Eds. Reidel, Boston, 1984 (distributor, Kluwer, Hingham, Mass.). xxxvi, 318 pp., illus. \$86. Pontificae Academiae Scientiarum Scripta Varia, 55. From a meeting, Rome, Nov. 1983.

**Spectroscopy of Biological Molecules.** Theory and Applications—Chemistry, Physics, Biology, and Medicine. Camille Sandoz and Theophile Theophanides, Eds. Reidel, Boston, 1984 (distributor, Kluwer, Hingham, Mass.). x, 646 pp., illus. \$89. NATO ASI Series C, vol. 139. From an institute, Acquafredda di Maratea, Italy, July 1983.

**State of the World 1985.** A Worldwatch Institute Report on Progress Toward a Sustainable Society. Lester R. Brown et al. Norton, New York, 1985. xviii, 301 pp. Paper, \$8.95.

**Statistical and Mathematical Methods in Population Dynamics and Pest Control.** R. Cavalloro, Ed. Published for the Commission of the European Communities by Balkema, Rotterdam, 1984. x, 243 pp., illus. \$26. From a meeting, Parma, Italy, Oct. 1983.

**Statistical Methods for Engineers and Scientists.** Robert M. Bethea, Benjamin S. Duran, and Thomas L. Bouillon. 2nd ed. Dekker, New York, 1985. xxvi, 698 pp., illus. \$37.75. Statistics, vol. 57.

**Statistical Methods in Food and Consumer Research.** Maximo C. Gacula, Jr., and Jagbir Singh. Academic Press, Orlando, Fla., 1984. xvi, 508 pp., illus. \$79.50. Food Science and Technology.

**Stocking the Arsenal.** A Guide to the Nation's Top Military Contractors. Linda S. Shaw, Jeffrey W. Knopf, and Kenneth A. Bertsch. Investor Responsibility Research Center, Washington, D.C., 1985. xvi, 207 pp. Paper, \$19.

**A Strategic Analysis of Science and Technology Policy.** Harvey A. Averbach. Johns Hopkins University Press, Baltimore, 1985. xvi, 216 pp. \$20.

**Structural and Resonance Techniques in Biological Research.** Denis L. Rousseau, Ed. Academic Press, Orlando, Fla., 1984. xiv, 476 pp., illus. \$69. Physical techniques in Biology and Medicine.

**The Structure, Development and Evolution of Reptiles.** A Festschrift in Honour of Professor A. d'A. Bellairs on the Occasion of His Retirement. Mark W. J. Ferguson, Ed. Published for the Zoological Society of London by Academic Press, Orlando, Fla., 1984. xxii, 697 pp., illus. \$75. Symposia of the Zoological Society of London, No. 52. From a symposium, London, May 1983.

**The Use of Economic Analysis in Valuing Natural Resource Damages.** Edward J. Yang, Roger C. Dower, and Mark Menefee. Ocean Assessments Division, National Oceanic and Atmospheric Administration, Rockville, Md., 1984. x, 154 pp. Paper.

**W. G. Cochran's Impact on Statistics.** Poduri S. R. Rao and Joseph Sedransk. Wiley, New York, 1984. xx, 431 pp., illus. \$41.95.

**Women in Science.** Portraits from a World in Transition. Vivian Gornick. Touchstone (Simon and Schuster), New York, 1985. 173 pp. Paper, \$6.95. Reprint, 1983 edition.

**Women in the Scientific Search.** An American Bibliography, 1724-1979. Patricia Joan Siegel and Kay Thomas Finley. Scarecrow Press, Metuchen, N.J., 1985. xviii, 399 pp. \$32.50.

**Work Transformed.** Automation and Labor in the Computer Age. Harley Shaiken. Holt, Rinehart and Winston, New York, 1985. xiv, 306 pp. \$17.95.



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**LINE DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth):** \$11.40 per millimeter; \$285 minimum, per week (minimum charge covers 25 millimeters on a single column; 25 millimeters equals 10 lines of 50 spaces per line). No charge for use of box number. No agency commission for ads less than 103 millimeters (4 inches). No cash discount. Prepayment required for all foreign ads. Purchase orders and billing address required for all other advertising.

Send copy for all **Positions Wanted** ads and **Line Display** ads less than 1/6 page in size (125 millimeters) to:

**SCIENCE, Room 107**  
1515 Massachusetts Avenue, NW  
Washington, D.C. 20005  
Telephone: 202-467-4456

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**Scherago Associates, Inc.**  
1515 Broadway  
New York, N.Y. 10036  
Telephone: 212-730-1050

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**SCIENCE**  
1515 Massachusetts Avenue, NW  
Washington, D.C. 20005

## POSITIONS WANTED

**Anatomy-Teratology-Life Sciences.** Doctorate. Experience: Teaching—anatomy, embryology, biology, research—teratology, reproduction, growth. Interdisciplinary health/life sciences background. Seeks term academic, industry position. Available immediately. Box 99, SCIENCE. X

**Biochemist.** Ph.D. (1982), 2 years of postdoctoral experience. Experienced in variety of electrophoretic techniques, chromatography, immunochemical methods, radioisotopes, and more. Seeks industrial or academic position. Box 104, SCIENCE. X

**Computer Scientist.** Ph.D. Michigan, 1981, seeks academic/research position in use of mathematical models and software to study and analyze complex biological systems, for example, endocrine systems. Publications; industrial experience; excellent references. Box 106, SCIENCE. 5/10, 17, 24, 31

**Endocrinologist** seeking position as research assistant in academic, institute, or industry. Three years of experience in gastrointestinal hormone research using radioimmunoassay. Knowledgeable in other immunoassay techniques. Wants position that involves technological participation as well as technical skills. Bachelor of science in biology and medical technology (American Society of Clinical Pathologists-eligible). Box 107, SCIENCE. X

**Medicinal/Peptide Chemist**—Ph.D.—Group leader with extensive experience in the pharmaceutical industry in the design and synthesis of biologically active peptides. Strong background in solution and solid phase technology, purification techniques, analytical development, and production scale-up. Numerous patents and publications. Box 105, SCIENCE. 5/10, 17, 24, 31

## POSITIONS WANTED

**Ghostwriter.** California writer available to connect megagap between LaJolla/Boston through 1986 with inspiringly factitious SCI-FI's pertinent to FUTURE-NOW enlightenment. Vantage material/updates/collective/personal/inquiries this vector: URTH-PROJX80's, Route 2, Box 331, Deridder, Louisiana 70634. X

**Human Cytogeneticist,** Ph.D. More than 10 years of experience in clinical cancer, experimental cytogenetics. Seeking position at associate professor rank, preferably in California. Box 109, SCIENCE. X

**Immunologist.** Ph.D. Academic and industrial research experience in cellular and molecular immunology, lymphokines, immunoassay development, hybridoma and monoclonal antibodies. Excellent publications and references. Seeking academic or industrial position. Box 108, SCIENCE. 5/10, 17, 24

**Regulatory Affairs-Toxicology.** Twenty years of pharmaceutical, chemical, and consumer product industry experience. Ph.D. pharmacology/toxicology. Experienced in IND, NDA, FAP, foreign registrations; TSCA compliance; agency liaison; product safety evaluation. Box 101, SCIENCE. X

**Toxicologist/Teratologist.** Ph.D. with postdoctoral experience. Broad background encompassing engineering, biological sciences, toxicology, pharmacology with project management. "Hands on" experience in safety evaluations, necropsies, observing biological specimens for abnormalities, and report writing. Trained in a contract-type laboratory setting and risk assessment. Experience in teaching and supervision. Seeking industrial or governmental position; will consider an academic post. Well organized researcher/coordinator, excellent communication skills. Available immediately. Hoffman, 8 Norwood Terrace, North Caldwell, New Jersey 07006. Telephone: 201-226-7617 or 7421. X

## POSITIONS OPEN

The Department of Pathology at The Wayne State University School of Medicine is seeking an **ANATOMIC PATHOLOGIST** at the level of assistant professor to serve in a hospital based Division of Anatomic Pathology. Candidates should have experience in immunohistochemistry and/or flow cytometry. Responsibilities will include teaching and research as well as service. Candidates should be Board-certified or -eligible in anatomic pathology and exhibit scholarship potential. Interested candidates should send their curriculum vitae and three references to: **Joseph Wiener, M.D., Chairman, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.**

*An Equal Opportunity/Affirmative Action Employer*

The Department of Pathology at The Wayne State University School of Medicine is seeking an **ANATOMIC PATHOLOGIST** at the level of assistant professor to serve as director of a hospital based Division of Anatomic Pathology. Successful candidate will be responsible for coordinating the diagnostic, teaching, and research activities of the sections of surgical, and autopsy pathology and cytopathology. Candidates should be Board-certified in anatomic pathology, have on-line experience in diagnostic surgical pathology service, and be a recognized scholar in gynecological pathology. Interested candidates should send their curriculum vitae and three references to: **Joseph Wiener, M.D., Chairman, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.**

*An Equal Opportunity/Affirmative Action Employer*

**ASSISTANT PROFESSORSHIP/REED COLLEGE.** The Chemistry Department of Reed College invites applications for a 1-year leave replacement appointment in organic chemistry at the assistant professor level. The candidate will be expected to have active research interests appropriate for undergraduates in the senior thesis program. Submit complete curriculum vitae, an outline of research interests, and arrange to have three letters of recommendation sent to: **Professor John Hancock, Chairman, Department of Chemistry, Reed College, Portland, Ore. 97202.** The application should reach Reed College by 31 May 1985. *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**ANATOMIST/PHYSIOLOGIST.** Nine-month appointment as assistant professor beginning 20 August 1985. Teaching duties include introductory biology, anatomy-physiology, and human physiology. Ph.D. and teaching experience required. Send résumé and three letters of reference, to arrive by 5 June 1985, to: **Dr. Ronald Ballard, Texas Wesleyan College, Fort Worth, Tex. 76105.** *An Equal Opportunity Employer.*

**ASSISTANT CHIEF OF STAFF**—Cleveland Veterans Administration (VA) Medical Center and Case Western Reserve University School of Medicine seek a person Board-certified in psychiatry, internal medicine, neurology, or rehabilitation medicine for the full-time position of assistant chief of staff at the Cleveland VA Medical Center and a faculty appointment at Case Western Reserve University School of Medicine. The primary responsibility is management of clinical programs at a 743-bed neuropsychiatric and long-term care hospital, but academic and research interests are desirable. Please submit curriculum vitae to: **George B. Naff, M.D., Chairman, Search Committee for Assistant Chief of Staff, Cleveland VA Medical Center, 10701 East Boulevard, Cleveland, Ohio 44106.** Deadline for application is 1 June 1985. *Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT/ASSOCIATE DIRECTOR.** Marine Sciences Research Center, State University of New York (SUNY), Stony Brook, has an opening for an assistant/associate director starting about 1 September 1985. Individual will work closely with director in facilities, program development, administration, and fund raising. Candidates must have demonstrated effectiveness in the design, development, and management of sponsored research projects and programs; a Ph.D. or equivalent experience in some area of the marine sciences; and a significant publication record. Experience in fund raising in private sector desirable. Two-year initial appointment on permanent appointment track state line. Salary: \$28,000 to \$36,000 per annum. Send résumé and have three letters of reference sent by 15 June 1985 directly to: **G. Giese, Associate Director Search Committee, Marine Sciences Research Center, SUNY, Stony Brook, Stony Brook, N.Y. 11794-5000.** *SUNY, Stony Brook, is an Affirmative Action/Equal Opportunity Educator and Employer.* AK Number 93-85.

## ASSISTANT PROFESSOR, BIOCHEMISTRY

Applications are invited for one 12-month, tenure-track position which will begin on or before 1 January 1986. Preference will be given to individuals with chemical and biochemical expertise and research interests in the structure-function relationships of biological macromolecules. Despite these preferences, applications from individuals having other research interests and expertise will be considered. Applicants, who should have a Ph.D. and postdoctoral experience in biochemistry or a related field, will be expected to develop an active, externally funded research program, and to participate in the undergraduate and graduate teaching programs of the department. Normal teaching assignments are a one semester lecture or laboratory course per academic year. Applications should include curriculum vitae, copies of publications, graduate and undergraduate transcripts and a brief statement of current, and future research interests. Three people, well acquainted with the applicant's research and teaching ability, should be asked to send letters of reference. Review of applications will begin in June 1985; interviews will be scheduled in late summer or early fall 1985. Inquiries and applications should be directed to: **Roger E. Koeppe, Biochemistry Department, 454 PSII, OKLAHOMA STATE UNIVERSITY, Stillwater, Okla. 74078.** *Equal Opportunity/Affirmative Action Employer.*

**CHIEF, PSYCHIATRY SERVICE**—Cleveland Veterans Administration (VA) Medical Center and Case Western Reserve University School of Medicine seek a Board-certified academic psychiatrist for the full-time position of chief of psychiatry at the Cleveland VA Medical Center and a senior faculty appointment at Case Western Reserve University School of Medicine. Duties will include management and direction of inpatient and outpatient psychiatric services, medical student and resident education, and research. Please submit curriculum vitae to: **George B. Naff, M.D., Chairman, Search Committee for Chief of Psychiatry, Cleveland VA Medical Center, 10701 East Boulevard, Cleveland, Ohio 44106.** Deadline for application is 1 June 1985. *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR

**THE WISTAR INSTITUTE**, a nonprofit biomedical research facility, is seeking a molecular geneticist at the assistant professor level. The candidate should have a Ph.D. in biochemistry and at least 4 years of related experience. The applicant will be involved in studies of the molecular basis of B-cell neoplasia. Candidate must have an outstanding record of molecular genetics and have experience in studies of structure and organization of human immunoglobulin chain genes and oncogenes. The applicant should be interested in the study of genes directly involved in the pathogenesis of human B-cell neoplasia. The candidate selected will become an integral part of the research team. Salary range is \$29,000 to \$32,000 per annum. Interested candidates should submit résumés to: **Patricia Menel, Personnel Department, THE WISTAR INSTITUTE, 36th and Spruce Streets, Philadelphia, Pa. 19104. Equal Opportunity Employer.**

The Section of Cardiovascular Sciences, Department of Medicine, Baylor College of Medicine, invites applications for a tenure-track faculty position at the level of **ASSISTANT PROFESSOR**. The applicant should have a Ph.D. and at least 2 years of postdoctoral experience in the area of animal surgery and conscious animal experimentation. The successful applicant will be actively involved in ongoing projects investigating myocardial ischemia and cardiovascular physiology and will develop an independent research program. Applicants should submit curriculum vitae and names of three references by 15 June 1985 to: **Dr. Lloyd H. Michael, Section of Cardiovascular Sciences, Department of Medicine, Baylor College of Medicine, One Baylor Plaza, Houston, Texas 77030. Baylor College of Medicine is an Equal Opportunity/Affirmative Action Employer.**

**ASSISTANT/ASSOCIATE PROFESSOR OF BIOLOGY**, Northeast Louisiana University (NLU). Position anticipated 26 August 1985. Ph.D. required. Applicants need teaching breadth in human anatomy and physiology with specialization in cancer research or related field. Must be capable of conducting a vigorous research program in support of graduate physiology program; will teach undergraduate courses in zoology and physiology and serve as a major faculty advisor. Small animal surgery and tissue culture experience preferred. Send statement of research goals, résumé, and three references to arrive by 31 May 1985 to: **Dr. M. L. Kinkade, Head, Department of Biology, Northeast Louisiana University, Monroe, Louisiana 71209. NLU is an Equal Opportunity/Affirmative Action Employer.**

**ASSISTANT PROFESSOR/BIOLOGY**—Tenure-track. Will teach fisheries biology, ecology, ichthyology, and oceanography. Will supervise undergraduate student research projects. Requirements: Ph.D., teaching experience, commitment to undergraduate teaching. Send résumé, transcripts, and three references by 7 June 1985 to: **Dr. David T. Bernstein, Division of Life Sciences, University of New England, Biddeford, Maine 04005. An Equal Opportunity/Affirmative Action Employer.**

**ASSISTANT PROFESSOR OF CHEMISTRY**—Term appointment. Responsible for Biochemistry Program. Ph.D. in biochemistry or related discipline, postgraduate research experience, and proven teaching ability required. Responsibilities include: teaching undergraduate and master's courses in biochemistry, general chemistry, and possibly organic chemistry, and maintenance of an ongoing independent research program. Closing date: 1 June 1985. Please send curriculum vitae and three references to:

Personnel Services  
University of Alaska, Anchorage  
3211 Providence Drive  
Anchorage, Alaska 99508

### ASSISTANT/ASSOCIATE PROFESSOR OF RADIATION ONCOLOGY DEPARTMENT OF RADIATION MEDICINE

M.D. or M.D./Ph.D. clinical, teaching, and research in academic radiation medicine for Board-eligible or -certified person. Position in tenure-track. Research interests and experiences in tumor research and therapy desirable. Active neutron therapy research program ongoing. Send curriculum vitae, bibliography, and names of three references to: **Chairman, Department of Radiation Medicine, University of Kentucky Medical Center, Room C-13, 800 Rose Street, Lexington, Kentucky 40536-0084. An Equal Opportunity Employer.**

## POSITIONS OPEN

**ASSISTANT PROFESSOR, BOTANY**. The Department of Biological Science at Idaho State University invites applications for a 9-month, tenure-track faculty position in botany beginning September 1985 (salary range: \$19,000 to \$21,000). Candidates must possess a Ph.D. or D.A. degree. The successful candidate will be expected to teach courses in general botany and plant morphology, supervise graduate students (M.S., D.A., Ph.D.) and to pursue individual research interests. Please submit a letter of application, transcripts, curriculum vitae, and three letters of recommendation by 1 June 1985 to:

**Dr. Edwin W. House, Chair  
Botany Search Committee  
Department of Biological Sciences  
Idaho State University  
Pocatello, Idaho 83209**

*Equal Opportunity/Affirmative Action Employer*

**DEPARTMENT OF PHYSIOLOGY, UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE**. Applications are invited for two tenure-track positions at the level of **ASSISTANT PROFESSOR**. The department seeks to expand research strength and structure and function relationships in cell physiology, such as, but not restricted to, exocytosis and its regulation, ciliary motility, or cell-cell interaction. The department wishes to maintain its traditional strength in the fields of respiratory and gastrointestinal physiology. Send curriculum vitae giving specific research interests and names of three referees to: **Dr. S. Lahiri, Chairman of the Search Committee, Department of Physiology, University of Pennsylvania, School of Medicine/G4, Philadelphia, Pa. 19104, by 1 June 1985. Equal Opportunity/Affirmative Action Employer.**

### ASSISTANT PROFESSOR OF PLANT PATHOLOGY

The Department of Plant Pathology, University of California, Berkeley, announces a tenure-track assistant professor position in plant pathology with emphasis on fungal diseases. Applicants must have a Ph.D. degree in plant pathology or an area appropriate to the described position. Examples of research areas that would be considered appropriate include: pathogen ecology, genetics of host-pathogen interactions, biological control, and quantitative epidemiology. Teaching responsibilities will include a graduate course and participation in other graduate courses and the undergraduate teaching program in pest management. Applicants should submit curriculum vitae, transcripts, publications, and brief description of research goals, and arrange for three letters of reference to be sent to: **J. G. Hancock, Department of Plant Pathology, University of California, Berkeley, Calif. 94720, by 15 August 1985. This position will be available 1 January 1986.**

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

**ASSISTANT RESEARCH PROFESSOR**. A position is available immediately for a cell biologist or biochemist with postdoctoral experience in protein biosynthesis and the cytoskeleton in higher eukaryotes to join a multi-disciplinary group studying the molecular basis of Alzheimer's disease. The successful applicant should be familiar with cell culture, immunological techniques, tissue sectioning, and autoradiography at the cellular level. Salary level is \$26,500 per year. Applicant should send curriculum vitae and names of several referees by 7 June to: **Dr. Robert E. Rhoads, Department of Biochemistry, University of Kentucky, College of Medicine, Lexington, Ky. 40536. An Equal Opportunity Employer.**

**CHAIRPERSON, DEPARTMENT OF ANATOMY**—Rutgers Medical School, an academically autonomous institution within the University of Medicine and Dentistry of New Jersey (UMDNJ), seeks a chairperson for the Department of Anatomy. Those interested should contact: **Henry B. Murphree, M.D., Chairperson of Anatomy Search, UMDNJ—Rutgers Medical School, P.O. Box 101, Piscataway, N.J. 08854. An Equal Opportunity/Affirmative Action Employer, M/F/H/V.**

### UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY

**CHEMIST** to conduct research work in organic chemistry on the synthesis of derivatives of adamantane and diamantane and their possible polymerization. Ph.D. in organic chemistry. Must have manipulative and maintenance knowledge of NMR, IR, MS, and GC. Job site: Los Angeles. Salary: \$1605 per month. Send this ad and your résumé to: **Job Number 75773, P.O. Box 865, Sacramento, Calif. 95804.**

## POSITIONS OPEN

The Department of Land, Air and Water Resources, University of California, Davis, announces a position in the area of **SOIL SCIENCE/PLANT NUTRITION**. Tenure-track (11 months plus 1 month of paid vacation) position will be divided 30 percent teaching and 70 percent research. Appointment will be at the **ASSISTANT PROFESSOR** level.

**Qualifications:** A Ph.D. in a field related to soil or plant science with specialization in mineral nutrition, and strength in mathematics, physics, and chemistry. The appointee will develop research on the root-soil interface, involving experimental study and quantitative modeling of chemical and biological processes associated with ion uptake and solute transport. Depending on the appointee's interests, the basic research might be slanted toward a particular application such as nutrient efficiency, stress tolerance, pollutant behavior, soil acidification, symbioses, or control of rhizosphere microbes. The appointee will take part with other faculty in teaching courses in soil science and plant nutrition, advising responsibilities, and will develop a graduate course in rhizosphere chemistry and biology.

**Applications:** Applicants should submit curriculum vitae, statements of interests and background in research and in teaching, official undergraduate and graduate transcripts, copies of publications and current manuscripts, and names and addresses of at least three references. Send materials to: **Dr. D. N. Munns, Chair, Plant Nutrition Search Committee, Department of Land, Air, and Water Resources, Hoagland Hall, University of California, Davis, California 95616, no later than 13 June 1985. Position becomes available 1 July 1985.**

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

**BIOCHEMIST**—Multi-year, renewable contract position available for Ph.D., D.O. or M.D. to perform **BIOCHEMICAL RESEARCH**, seek outside support, and teach part of medical biochemistry course to medical students. New modern laboratories are available for qualified person with track record and publications. Salary, length of renewable contract, and academic rank commensurate with qualifications. Interested candidates should send curriculum vitae and all supportive evidence (current grant support and grant track record and teaching experience) to: **SEARCH COMMITTEE, Dr. Arnold L. Nagler, Associate Dean, Preclinical Medical Education, New York College of Osteopathic Medicine, Old Westbury, New York 11568.**

**BIOCHEMIST** to conduct original research on the regulation of xenobiotic metabolism in diabetes involving isolation of diabetic hepatic cytochrome P-450 from rats; Ph.D. or equivalent in biochemistry/chemistry with recent experience and background in protein isolation, synthesis regulation, immunochromatographic techniques, and xenobiotic metabolism. Publications in refereed scientific publications. Salary: \$17,000 per year. Send résumés to: **Robert Powell, Nebraska Department of Labor, Box 94600, State House Station, Lincoln, Neb. 68509. Job Order Number 226143.**

**BIOCHEMIST**. The Department of Orthopaedics, Louisiana State University (LSU) Medical Center, invites applications for a tenure-track faculty position in the area of proteoglycan and/or collagen biochemistry. The appointment can be made at the level of assistant or associate professor, depending upon experience. A joint appointment to Biochemistry Department is possible. Candidates beginning their careers are encouraged to apply. Applicants should send curriculum vitae, bibliography, a three-page summary of research goals, and the names of three references to the following: **Dr. Robert D'Ambrosia, Chairman, Department of Orthopaedics, LSU Medical Center, New Orleans, Louisiana 70112.**

*The Louisiana State University is an Equal Opportunity/Affirmative Action Employer.*

**BIOCHEMIST/CELL BIOLOGIST**—The Department of Dermatology at New York University invites applications for a tenure-track position as an assistant professor. Ph.D. is required and potential for joint appointment in the appropriate basic science department exists. Specific research area relates to the post-translational modification of keratin, the major intermediate filament protein in epithelial cells. Candidates must have past experience and continuing interest in this topic. Send curriculum vitae and three references to: **Dr. Irwin M. Freedberg, Chairman, Department of Dermatology, New York University, 550 First Avenue, New York, New York 10016.**

## STAFF SCIENTIST CARDIAC PHYSIOLOGIST/ PHARMACOLOGIST

Norwich Eaton Pharmaceuticals, Inc., a wholly-owned subsidiary of the Procter & Gamble Company, has an immediate opportunity in its Research Division for a highly-motivated and talented professional interested in the area of cardiac drug discovery research. The preferred candidate will have a Ph.D. degree in cardiovascular physiology/pharmacology with 3-5 years of postdoctoral experience. Specific responsibilities will include designing, preparing and executing studies with chronically-instrumented, conscious animal models including, but not limited to dogs. The specific objective is the discovery of novel cardiac drugs.

Norwich Eaton offers you the opportunity to challenge your skills and realize your professional potential in a beautiful rural location in Central New York State. In addition, we offer a competitive employment package including paid relocation, company paid health, dental and retirement benefits. Send resume and salary requirements to:

**Susan M. Finch**  
Personnel Representative  
17 Eaton Avenue  
Norwich, NY 13815

Equal Opportunity Employer M/F

# Colgate- Palmolive R&D

## BASIC PERIODONTAL RESEARCH

The Colgate-Palmolive Company is a Fortune 100 world leader in oral health products. Our dentifrices are used by consumers around the globe.

We now have two exceptional opportunities for PhDs to join Periodontal Research at our Corporate Research Center.

### Monoclonal Antibodies

Molecular Biologist, Cellular Immunologist or Cell Biologist. Must be proficient in using hybridoma technology to develop monoclonal antibodies, and in applying monoclonals to fundamental studies on pathophysiological processes.

### Drug Delivery Systems

Physical Pharmacist or Pharmaceutical Chemist. Experience to include developing topical drug delivery systems, including relating *in vitro* model systems to *in vivo* conditions.

The Corporate Research Center is situated on 75 acres in suburban central N.J., an hour from Manhattan. Colgate-Palmolive Company is an Equal Opportunity Employer M/F.

To apply in confidence, send curriculum vitae and publication list to: Al Williams, Human Resources Department (BA), 909 River Road, Piscataway, New Jersey 08854.



COLGATE-PALMOLIVE COMPANY

# Associate Research Scientists

The Bristol-Myers Pharmaceutical Research and Development Division has excellent career opportunities in its Immunology Department for Associate Research Scientists with a BS/MS degree in Biological Sciences (or related area) and 3-5 years experience relevant to one of the following areas:

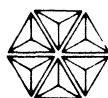
## IMMUNOCHEMISTRY

Successful candidate will participate in the development and selection of monoclonal antibodies (MAb) in our team approach to monoclonal antibody drug targeting. Responsibilities will include development and maintenance of monoclonal antibody producing cell lines/hybridomas, isolation, purification and characterization of monoclonal antibodies. Preference will be given to individuals with experience in RIA and ELISA development and application, monoclonal antibody production/characterization, tissue culture, enzyme and radioisotope conjugation methods.

## IMMUNOREGULATION

Successful candidate will participate in a research project directed toward the cloning of human genes that control expression of various lymphokines/cytokines involved with immunoregulation. Responsibilities will include isolation of genomic DNA, carrying out co-transformation experiments, isolating restriction enzyme digests of DNA and transfection using appropriate vectors. Preference will be given to individuals with previous experience in molecular biology and tissue culture.

Presently located in Syracuse, NY, our Immunology Department will relocate in the Spring of 1986 to a new state-of-the-art research facility in a delightful Connecticut community close to New Haven. We offer excellent starting salaries, comprehensive benefits and exceptional opportunities for professional achievement. For prompt, confidential consideration, forward your resume indicating position of interest, salary history and requirement, to: EMPLOYMENT RECRUITER



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**RESEARCH AND DEVELOPMENT DIVISION**  
P.O. Box 4755, Syracuse, New York 13221  
An equal opportunity employer

## POSITIONS OPEN

### CELL BIOLOGIST

Nationally recognized scientist with a strong background in one of the following areas—cellular lipid metabolism, action of growth factors, or leukocyte activation—is essential, particularly as related to the initial etiology and development of atherosclerosis. Such an investigator would participate in a multidisciplinary approach to the early detection and/or prevention of atherosclerotic vascular changes. **Box 102, SCIENCE.**

**DEPARTMENT CHAIRPERSON.** The Ohio State University College of Veterinary Medicine invites nominations and applications for the position of chairperson for the Department of Veterinary Physiology and Pharmacology. Applicants should hold the Ph.D. or equivalent degree and have demonstrated excellence in research, administration, communication skills, and a commitment to professional and graduate education. Duties include administration of a department with programs in physiology, pharmacology and toxicology, and assistance with college planning and administration. Salary is negotiable. Nominations or applications including curriculum vitae and names of three references should be sent to: **Dr. L. E. Helder, The Ohio State University, College of Veterinary Medicine, 1900 Coffey Road, Columbus, Ohio 43210-1092. The Ohio State University is an Equal Opportunity/Affirmative Action Employer.**

The University of Washington, School of Dentistry, is seeking a **CHAIRMAN**, to be appointed at the rank of **PROFESSOR**, for the Department of Community Dentistry.

The successful candidate will be expected to provide strong academic and administrative leadership to a multi-disciplinary, research-oriented group of dentists, behavioral and social scientists, whose investigations range from economics to basic psychology. Criteria for selection includes excellence in teaching and research.

He/she will be sensitive to the department's and school's needs to ensure an integration of behavioral science and community health knowledge into the school's pre- and postdoctoral programs and should have a D.D.S./D.M.D. degree, and/or an M.D. degree, and/or a Ph.D. degree in an area related to the activities of the department. Intramural practice available.

*The University of Washington is an Equal Opportunity Employer.* Send curriculum vitae and support data to: **Dr. Robert Myall, Chairman, Search Committee for Community Dentistry, University of Washington, SC-62, Seattle, Wash. 98195, by 30 September 1985.**

**DIRECTOR OF ANATOMICAL PATHOLOGY.** Faculty position, Department of Pathology, University of California, San Francisco (UCSF) to direct patient service, research, and teaching activities at UCSF-affiliated San Francisco General Hospital. **Requirements:** Board-certification in anatomical pathology and California medical license or eligibility. Demonstrated successful administrative, research, clinical, and teaching experience. Rank and salary commensurate with qualifications. Send curriculum vitae to: **Search Committee, Department of Pathology, University of California, San Francisco, Calif. 94143. UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.**

**ECOLOGIST** with training in behavioral ecology and population sampling. Full-time research on dynamics and habitat selection of Southern tree squirrels. U.S. Forest Service, Clemson, S.C. GS-408-11. Starts at \$26,381. Apply by 31 May to: **Announcement Number 400-5-0059-SE, U.S. Department of Agriculture-ARS-SEU, Room 409, Building 003, BARC-West, Beltsville, Md. 20705. Information: Telephone: 803-656-3284. Equal Opportunity Employer.**

**EXERCISE PHYSIOLOGY.** Assistant/associate professor (tenure-track) to conduct human cardiovascular research, teach, secure funds, and direct cardiac rehabilitation program. Submit letter of application, curriculum vitae, and three reprints, and have three letters of recommendation sent to: **Charles M. Tipton, Ph.D., Head, Department of Exercise and Sport Sciences, University of Arizona, Tucson, Arizona 85721. Application deadline: 21 May 1985. An Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

**DATABASE ANALYST**—Proficient in C, PL/1 and Lisp programs. Strong computer science and math background; B.S. computer science; in-depth knowledge of database theory and computer graphic principles; 1 year of experience; \$30,000 per year; 8 a.m. to 5 p.m., 5 days, Manhattan Beach, California. Please send this ad and your résumé to: **Job Number 5333, P.O. Box 865, Sacramento, Calif. 95804, not later than 25 May 1985.**

### DIRECTOR OF MARINE POLICY CENTER

The Woods Hole Oceanographic Institution is seeking an individual with a strong record of accomplishments in the marine or social sciences and demonstrated leadership qualities for the position of director of its Marine Policy Center. The Marine Policy Center has a permanent staff of 10 and awards for postdoctoral scholarships annually. The research programs of the center have focused on marine resource and ocean management and on policy issues of national and international scope. The center is supported partly by endowment and partly by grants and contracts from private and federal sources. The Woods Hole Oceanographic Institution is a leading marine science institution with active research and development programs in ocean biology, geology, geophysics, chemistry, physics, and engineering. The director of the center will be expected to indicate and conduct independent research studies to promote interactions between marine and social scientists within the Institution and to be responsible for the planning of the future development of social science research at Woods Hole. Applications, including current curriculum vitae and list of suggested references, should be forwarded to:

#### Personnel Manager

Box 54P

Woods Hole Oceanographic Institution  
Woods Hole, Mass. 02543

*An Equal Opportunity Employer, M/F*

### FACULTY POSITION—VIROLOGY

The Department of Virology and Epidemiology, Baylor College of Medicine, invites applications for a tenure-track position in a research-oriented department. We seek an innovative individual with a strong foundation in animal virology to establish an independent, high quality research program in **MOLECULAR VIROLOGY** and to contribute to the departmental graduate program. Appointment will be made at the assistant professor level; salary will be competitive. Applicants should have a Ph.D. or M.D. degree and postdoctoral training. Interested persons should reply by 15 June 1985, by sending curriculum vitae, statement of research interests, and the names of three references to: **Dr. Janet S. Butel, Search Committee, Department of Virology and Epidemiology, Baylor College of Medicine, 1 Baylor Plaza, Houston, Texas 77030. Baylor College of Medicine is an Equal Opportunity Employer.**

**FACULTY POSITION—BIOCHEMISTRY.** The Department of Biochemistry, University of Virginia School of Medicine, invites applications for a tenure-track, full-time faculty position at the assistant or associate professor level starting no later than 1 September 1986. Applicants must exhibit a strong commitment to teaching, and to establishing a vigorous, independent research program. The candidate must have a doctoral degree in biochemistry or a closely related field with postdoctoral experience; however, applications are encouraged from all outstanding candidates irrespective of their current interests. Please submit letter of application, curriculum vitae, and three reference letters to: **Dr. Ching-hsien Huang, Chairman of Search Committee, Department of Biochemistry, Box 440, University of Virginia School of Medicine, Charlottesville, Virginia 22908. Application deadline is 1 August 1985. An Equal Opportunity/Affirmative Action Employer.**

**GEOLOGY/GEOPHYSICS: MASS SPECTROMETRY. RESEARCH POSITIONS.** University of California, San Diego, Scripps Institution of Oceanography. Assistant research geologist/physicist I, immediately available, for isotopic studies of noble gases. Ph.D. earth science/physics required, plus experience in mass spectrometry and field work. Postdoctoral position in physics/geophysics available for studies of noble gases, diffusion, and so forth. Ph.D. physics/geophysics and experience with mass spectrometers required. Salaries commensurate with experience. Résumé and three letters to: **H. Craig, A-020, Scripps Institution of Oceanography, La Jolla, Calif. 92093. Closes 31 May 1985. Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### FACULTY POSITION IN AUDITORY NEUROPHYSIOLOGY

The Section of Otolaryngology, Department of Surgery, Yale University School of Medicine, invites applications for a nontenured faculty position for teaching and research. Applicant must have a comprehensive knowledge of and previous experience in the field of electrophysiology of the auditory system, physiology of the vestibular system, behavioral techniques, mathematical data analysis, computer support, and basic biochemistry. A Ph.D. in neurophysiology and at least 3 years of postdoctoral experience are required. Candidates should exhibit evidence of an independent research program related to dysfunction of the auditory system and must be interested in and have the ability to interact productively with M.D.'s and other allied health professionals involved in clinical research. A principal responsibility includes teaching medical students and otolaryngology residents in fields of auditory and vestibular physiology and providing laboratory training for them. Candidates should submit curriculum vitae, list of publications, and names of three references to: **C. T. Sasaki, M.D., Chief, Section of Otolaryngology, Department of Surgery, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510. Deadline for applications is 27 May 1985.**

*Yale University is an Affirmative Action/Equal Opportunity Employer.*

**FACULTY POSITION.** The Department of Natural Sciences of LeMoyné-Owen College announces a position effective fall 1985. Applications will be considered in the areas of biochemistry, botany, anatomy, and physiology. Applicants should have a commitment to research and teaching at an undergraduate institution. Send curriculum vitae, a short summary of current research interests, and official transcripts to **Dr. Delphia Hamill, Chair, Department of Natural Sciences, LeMoyné-Owen College, 807 Walker Avenue, Memphis, Tenn. 38126. LeMoyné-Owen is an Equal Opportunity/Affirmative Action Employer.**



### THE AUSTRALIAN NATIONAL UNIVERSITY

The Research School of Chemistry of the Australian National University invites applications for a tenured appointment at the **FELLOW** level in inorganic chemistry. The research area can encompass any area of experimental or theoretical inorganic chemistry. Appointment for 5 years initially; reappointment to retiring age subject to satisfactory review. Salary range: A\$28,958 to A\$38,796 per annum. Reasonable travel expenses. Assistance with housing. Superannuation. Maternity leave is available. Closing date: 30 June 1985. Quote (**Reference: RC/4.4.1**) when submitting applications and requesting further information from: **The Acting Registrar, Australian National University, G.P.O. Box 4, Canberra, ACT 2601, Australia.**

*The University is an Equal Opportunity Employer.*

**HEAD, BASIC SCIENCE DEPARTMENT.** The School of Dental Medicine, University of Connecticut Health Center, is seeking to fill the position of **head, Department of Oral Biology.** The position is a full-time, tenure-track appointment that will be filled at the rank of professor. The applicant must hold a Ph.D. degree in one of the biomedical sciences or a professional doctoral degree with equivalent research training, be actively engaged in basic research, and have teaching experience at the graduate level. Some administrative experience is preferred.

The Department of Oral Biology serves the basic science needs of the School of Dental Medicine. The department is multidisciplinary, with its ten full-time faculty representing the areas of molecular biology, cell biology, developmental biology, and the neurosciences. The department's principal educational responsibility is the administration of a large Ph.D. program; it also provides additional teaching contributions to the undergraduate dental and medical curricula, and dental residency programs. Résumés should be sent to: **Dr. John Patterson, Chairman, Oral Biology Search Committee, Department of Physiology, University of Connecticut Health Center, Farmington, Connecticut 06032. Affirmative Action/Equal Opportunity Employer.**



## Post-Doctoral Fellow

Syntex, an international pharmaceutical and life sciences corporation has an immediate opening for a Post-Doctoral Fellow to study the generation, release or exposure of procoagulant activity (PCA). The studies will initially involve *in vitro* systems but should be expanded to include animal models. The development of models for pharmacologic inhibition of PCA generation will be emphasized.

Candidate must possess a PhD in biochemistry, biochemical pharmacology or immunology. Additional specialized training in physiology, hematology, protein biochemistry or cell biology helpful.

Send resume to Syntex Corporation, Professional Employment, Dept. LK, 3401 Hillview Avenue, Palo Alto, CA 94304. We are an equal opportunity employer.



## Professorial Positions

### Molecular Biology Center Mount Sinai School of Medicine of the City University of New York

Mount Sinai School of Medicine of CUNY announces a new initiative in molecular biology. The Molecular Biology Center plans to appoint groups of research scientists who are creatively attacking important biological problems using the most advanced techniques in molecular biology.

We are seeking (an) established investigator(s), who will assume a leadership role, as well as applicants for assistant or associate professorships.

Please send inquiries curriculum vitae to:

Dr. Terry Ann Krulwich  
Mount Sinai School of Medicine  
1 Gustave L. Levy Place  
New York, New York 10029



United States Department of Agriculture

## Postdoctoral Research Associates

The Agricultural Research Service as the principal scientific research agency of USDA, conducts research to produce more and better food and fiber; to control insect pests and weeds safely; to get food to consumers in better condition; to improve human nutrition; to help protect soil, water, and air, and to find new uses for agricultural commodities. Much of the work is on the cutting edge of each discipline—biotechnology (including molecular biology, genetic engineering, and membrane research), application of theories of artificial intelligence to computer technology, and innovative approaches to pest control through insect neurochemistry and the use of pheromones.

**ARS is currently recruiting for 50 postdoctoral positions throughout the country. Opportunities exist in the following research areas:**

- Genetics
- Biochemistry
- Chemistry
- Microbiology
- Animal Science
- Veterinary Science
- Physiology
- Entomology
- Plant Physiology
- Plant Pathology
- Agronomy
- Soil Science



Successful candidates will be hired under excepted appointments up to 2 years in duration. Salary for these GS-11/12 positions (\$26,381 to \$31,619) will be based on qualifications and experience. Candidates must be U.S. citizens.

*For information on positions available and application procedures, write to:*

C. M. Russ  
Personnel Division (SC)  
USDA/ARS  
Federal Building  
Hyattsville, MD 20782

ARS is an Equal Opportunity Employer. Women and Minorities are Encouraged to Apply.

## POSITIONS OPEN

### UNIVERSITY OF CALIFORNIA, IRVINE FACULTY POSITION

The University of California, Irvine, Department of Radiological Sciences, anticipates having a tenured opening for a senior (associate or full professor) faculty position in medical imaging physics. The candidate must have a Ph.D. in physics or engineering with proven research experience and preferably administrative experience. Individuals with broad interdisciplinary research interests are encouraged to apply. Experience in nuclear imaging instrumentation, single photon emission tomography, and related algorithms is desirable. Applicants should have a distinguished academic and research reputation which includes a successful record in obtaining contract and grant support. Additional responsibilities include directing the graduate program in radiological sciences and interfacing with the clinical faculty. The level of appointment and salary is dependent upon candidate's experience and academic achievements. Candidates should send curriculum vitae, statement of research interests, and names of five references to:

**Professor Z. H. Cho**  
Department of Radiological Sciences  
University of California, Irvine  
Irvine, Calif. 92717

Deadline for applications is 1 August 1985. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

Part-time **FACULTY POSITION** (with the possibility of going full-time) in the Departments of Pediatrics and Biochemistry. The candidate should have a doctoral degree in biochemistry, a masters degree in nutrition and be a registered dietitian in order to undertake studies and nutritional management of patients having phenylketonuria (PKU), maternal PKU, and hyperphenylalaninemia. The position requires the candidate to teach an undergraduate biochemistry course, a medical school seminar course, and team teaching in selected medical school nutrition and cell biology courses. We are particularly interested in qualified minority candidates. Send résumé and two references to: **Henry N. Kirkman, M.D., Chief, Pediatric Division of Genetics and Metabolism, 306 BSRC 220H, University of North Carolina, Chapel Hill, N.C. 27514. Affirmative Action/Equal Opportunity Employer.**

**LECTURER** (nontenure-track), **SURFACE PHYSICS**. The Department of Physics and Astronomy of the University of North Carolina at Chapel Hill seeks a qualified candidate for a temporary appointment in the research area of experimental surface physics for the academic year 1985-1986. This is not a tenure-track position. The appointee will be expected to help develop the departmental capabilities in experimental surface physics and teach two physics courses for the academic year 1985-1986. Send curriculum vitae and names of three references to: **Dr. Sang-il Choi, Chairman, Department of Physics and Astronomy, Phillips Hall 039A, University of North Carolina, Chapel Hill, N.C. 27514, by 10 June 1985. Equal Opportunity/Affirmative Action Employer.**

### MESOZOIC PALYNOLOGIST

The U.S. Geological Survey (USGS), Geologic Division, Branch of Paleontology and Stratigraphy, announces a vacancy for research geologist in Mesozoic palynology. Duties include conduct of biostratigraphic investigations and original research on fossil palynomorphs, with emphasis on the U.S. Atlantic and Gulf coastal plains. Position is to be located at USGS National Center, Reston, Virginia. Applicants should be U.S. citizens. Position salary and grade negotiable based on career experience (salary range \$31,619 to \$67,940 per annum, GS-12 to GS-15). For further information, contact: **T. A. Ager, 970 National Center, U.S. Geological Survey, Reston, Virginia 22092; telephone: 703-860-7745.**

Application must include Standard Form 171 (SF-171), Personal Qualifications Statement, available from above address or any federal personnel office. Application must be received by **T. A. Ager** by 15 July 1985. *The USGS is an Equal Opportunity Employer.*

**MICROBIOLOGIST**, Ph.D. required, who has experience in monoclonal antibodies production. The successful candidate will lead a small group in a development program for a new product. A sound knowledge of protein structural chemistry would be an advantage. Fringe benefit incentives will be available. Please send your résumé and salary requirements to: **President, Monoclonetics International, Inc., 9933 Mula Road, Stafford, Texas 77477.**

## POSITIONS OPEN

### FACULTY POSITION— EMERGENCY MEDICINE

Applications are being accepted for a faculty position of assistant professor in the Department of Emergency Medicine, University of Cincinnati College of Medicine.

Responsibilities include the development of basic and clinical research with application to emergency medicine including areas in resuscitation, reanimation, and environmental stress; development and procurement of research funding; participation in research seminars, lectures, and conferences; participation in education of emergency medicine fellows and residents.

Qualifications include an M.D. degree with residency and fellowship training in emergency medicine; expertise in pharmacology or cardiovascular physiology is required; knowledge of computer programming and advanced statistical analysis is expected; experience with animal modeling and physiologic monitoring is expected; previous application of basic research to clinical resuscitation is desired; evidence of prior grant development and procurement is preferable.

This will be a full-time, faculty position with tenure potential; promotions based upon research productivity and educational contribution to the Department of Emergency Medicine. Primary appointment with Department of Emergency Medicine with secondary appointments in other departments is possible. Send curriculum vitae no later than 1 June 1985 to: **Richard C. Levy, M.D., Director, Department of Emergency Medicine, University of Cincinnati College of Medicine, ML Number 769, Cincinnati, Ohio 45267-0769.**

**MARINE BIOLOGIST:** Assistant professor (tenure-track) beginning January 1986. Teaching undergraduate core course in marine biology, specialty course for advanced undergraduates, graduates, and direct graduate students in M.S. (marine biology). Ph.D. with postdoctoral experience required; special training in aquaculture/fisheries desirable. Send curriculum vitae, transcripts, and three letters of recommendation to: **Dr. David G. Lindquist, Department of Biological Sciences, University of North Carolina at Wilmington, Wilmington, North Carolina 28403-3297, by 15 July 1985. Affirmative Action/Equal Opportunity Employer.**

### MOLECULAR BIOLOGY AND BIOCHEMISTRY

IPRI, a plant biotechnology company located in the San Francisco area, has challenging positions in molecular biology and biochemistry.

**MOLECULAR BIOLOGISTS (two):** Ph.D. with up to 5 years of experience in plant molecular biology. Experience in gene isolation and characterization of gene products desirable.

**PLANT BIOCHEMISTS (two):** Ph.D. with up to 5 years of experience in plant tissue culture. A background knowledge of plant breeding and molecular biology desirable. Positions interact with these areas in multidisciplinary programs.

Persons with experience in related areas of plant molecular biology or plant biochemistry are encouraged to apply to:

**Personnel**  
**International Plant Research Institute**  
830 Bransten Road  
San Carlos, Calif. 94070



**NEUROHISTOLOGIST**, M.A. in related field. Individual with experience using wide range of neuron and fiber stains. Knowledge of immunocytochemistry desirable. Will interact with neuropsychology faculty and students. Tenurable line—lecturer title. Salary range: \$19,858 to \$30,428; starting salary dependent on qualifications. Fall 1985 or spring 1986, dependent on funding. Reply to: **Dr. Mitchell Kietzman, Neuropsychology Program, Psychology Department, Queens College of City University of New York, Flushing, N.Y. 11367. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**FACULTY POSITION.** The Department of Pharmacology, University of South Alabama, College of Medicine, invites applications for a tenure-track position at the level of assistant or associate professor. Primary responsibilities are performance of research and teaching medical and graduate students. Applications are encouraged from individuals interested in the regulation of biological processes at the molecular and/or cellular level, but other areas of pharmacology will also be considered. Interested individuals should send an outline of future research plans, curriculum vitae, including a bibliography, and the names of three individuals who may be contacted as references to: **Dr. Samuel J. Strada, Search Committee, Department of Pharmacology, University of South Alabama, College of Medicine, 3130 Medical Sciences Building, Mobile, Alabama 36688.** The deadline for the receipt of applications is 1 June 1985.

### NATIONAL SCIENCE FOUNDATION (NSF)

NSF, Division of Polar Programs, is seeking qualified applicants for the position of **HEAD, ARCTIC RESEARCH AND POLICY STAFF**. The Staff develop plans, studies, and reviews leading to the development of U.S. Arctic research policy. The position will be filled in either the competitive civil service (vacancy announcement number 85-76) or the excepted service (announcement number EX 85-54) at grade GS/GH-15, \$52,262 to \$67,940 per annum. Experience as a senior science administrator is required, including policy formulation and implementation at national and international levels. A Ph.D. and/or relevant experience in scientific fields including polar research is necessary. In applying, refer to the above announcement and submit Standard Form 171, Personal Qualifications Statement, performance appraisal and/or letters of recommendation to: **Stuart Solomon, National Science Foundation, 1800 G Street NW, Room 212, Washington, D.C. 20550.** For further information, telephone: 202-357-7840. Hearing impaired individuals should telephone: 202-357-7492. *NSF is an Equal Opportunity Employer.*

The College of Engineering at the University of California is engaged in the development of a new cross-disciplinary program in materials that would involve several existing departments and lead to a graduate program. Provisional searches for up to **FOUR POSITIONS** in the broad areas of **METALS AND CERAMICS** have been initiated. Outstanding candidates with interests in one or more of the following areas are invited to apply: structure-property relations in metals and ceramics; advanced analytical and high-resolution electron microscopy; and the mechanics of materials. Senior applicants with extraordinary records of research will be considered; junior candidates will be expected to demonstrate exceptional potential for scholarly achievement. The complementary skills of the candidates will be considered, and an effort will be made to recruit a group of individuals with strong interest in cross-disciplinary collaboration. The metals and ceramics group will also complement strong thrusts in the areas of polymers and electronic materials.

Applicants are encouraged to respond as soon as possible; applications will be received until positions are filled. Applicants should send professional résumé containing teaching and research accomplishments and three references to:

**Robert Mehrabian, Dean**  
College of Engineering  
University of California  
Santa Barbara, Calif. 93106

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

Position available for a recent Ph.D. graduate in **NEUROPHARMACOLOGY/NEUROSCIENCE**. Successful candidate should have experience either with neurochemistry of opiate or monoaminergic neuronal processes or have training in nociceptive test paradigms and microinjection techniques into brain sites or the intrathecal space of rats. Individual must be willing to participate with an interdisciplinary team studying the pharmacology of supraspinal and spinal mechanisms involved in antinociceptive drug action. Contact: **David J. Smith, Ph.D., Professor of Anesthesiology and Pharmacology, Department of Anesthesiology, West Virginia University Medical Center, Morgantown, W.Va. 26506.** Deadline for submitting application is 31 May 1985. Send curriculum vitae and statement of research interests. Position is currently available. *West Virginia University is an Affirmative Action/Equal Opportunity Employer.*

### SENIOR SPECIALIST IN AUTOMATED EDUCATION

This position involves senior level responsibility for the design, development, and testing of advanced hardware and software systems for computer-based education, including the development of large processor architecture and the translation of this into operational hardware. The position will also involve senior level responsibility in the development of software systems for the operation of PLATO on such new, high-speed processor design.

#### Qualifications

Master's degree plus approximately 10 years of experience or bachelor's degree plus approximately 15 years of experience in large scale software and hardware system design and development.

Thorough knowledge of CDC 170-730 machine language and the COMPASS assembler.

Familiarity and experience in digital design utilizing emitter-coupled-logic technology.

Familiarity and experience with the PLATO system and TUTOR language is desirable.

**Closing date:** Full-time, 11-month position starting 21 June 1985. To ensure full consideration, résumé must be received by 1 June 1985. Salary commensurate with achievements and ability.

#### Contact:

Dominic Skaperdas  
Senior Research Engineer  
Computer-based Education Research  
Laboratory  
University of Illinois  
252 Engineering Research Laboratory  
103 South Mathews Avenue  
Urbana, Ill. 61801  
Telephone: 217-333-6556

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

### MARINE ORGANIC CHEMIST AND PLANKTON TAXONOMIST (Two Positions)

**Former Position:** Requires Ph.D., extensive publications, national reputation, and ability to attract grants and/or contracts. Statistical and computer backgrounds desirable. Laboratory director position with high pay and equity possibility.

**Latter Position:** Requires knowledge of temperate marine phytoplankton, cruise experience, and willingness to participate in numerous national and international cruises. Background in other areas of plant and invertebrate taxonomy desirable.

Positions are with a 60-person, rapidly expanding environmental consulting company with three national offices. Please respond in writing to: Dr. Curt D. Rose, President, ERCO/A Division of ENSECO, Inc., 205 Alewife Brook Parkway, Cambridge, Massachusetts 02138.

### CHAIRPERSON—DEPARTMENT OF VETERINARY PREVENTIVE MEDICINE

Applications are invited for the position of chairperson of the Department of Veterinary Preventive Medicine at the New York State College of Veterinary Medicine.

The College seeks an individual with a D.V.M. and/or Ph.D. with outstanding academic accomplishments, including an established record of leadership in veterinary research and teaching. A vigorous interest in developing strengths particularly in epidemiology, biostatistics, and econometrics as applied to animal disease problems, and integrating them into the departmental teaching and research programs is expected. The department collaborates with the staff of the central Diagnostic Laboratory and four ancillary regional diagnostic laboratories. The department has its own VAX computer which interacts with the College's and University's computer facilities. Staff members provide biostatistic and epidemiologic consultation to faculty and staff in the Veterinary Teaching Hospital, other academic departments of the college, and departments in other colleges of the University. There is a strong commitment to teaching candidates for the D.V.M. professional degree, and graduate student teaching and research, both in veterinary medicine and in a university-wide program in epidemiology.

Send letters of nomination or application to: Dr. George C. Poppensiek, Chairman, Search Committee, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853-6401. Applicants should include a detailed résumé and the names of five individuals who may be contacted for references. The screening of applications will begin on 1 July 1985 and continue until a suitable candidate has been selected. *Cornell University is an Affirmative Action/Equal Opportunity Employer.*

### RESEARCH ASSOCIATE

Applications are invited for the position of Research Associate in the Central Nervous System Research Unit. This position involves evaluation and mechanism of action studies on potential new therapeutic agents regarding their interactions with neurotransmitters, receptors and effector systems. An expertise in the qualification of catecholamines and indoleamines by HPLC and/or GC/MS is particularly desirable.

Qualifications include a minimum of an MS or BS degree in pharmacology or biochemistry with training in CNS pharmacology and experience in procedures used with small laboratory animals. Additional training in Computer Science is desirable.

Kalamazoo is a medium-sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational and recreational pursuits including numerous lakes and a four-season climate. Upjohn offers an excellent salary, commensurate with experience and an outstanding benefits program.

For confidential consideration, please call inside Michigan, COLLECT (616) 323-6767 or from outside Kalamazoo, TOLL FREE 1-800-253-8600, extension 3-6767, to request an employment application sent to you immediately. Please refer to Ad Number 17358-A when calling.

**Upjohn**

The Upjohn company is an equal opportunity employer M/F

### CENTER OF MARINE BIOTECHNOLOGY UNIVERSITY OF MARYLAND

The University of Maryland is seeking a Director and Senior Research Scientists for the Center of Marine Biotechnology headquartered in Baltimore, Maryland. COMB will stress basic research in marine biology and microbiology. Potential areas of interest include biomaterials, biosensors, biofouling and marine pharmaceuticals. COMB is envisioned as a unique center of research in marine biotechnology, which through interaction among university, government and industry researchers will foster the dissemination and exchange of ideas and new knowledge.

#### DIRECTOR

The Director should be a well-established scientist with demonstrated abilities in the development and administration of multi-faceted research programs and the establishment of a creative research environment. The Director must combine strong scientific capability with an entrepreneurial spirit necessary to develop COMB into a national and international leadership position in the biological sciences. He/she will be expected to qualify for a tenured professorship in an appropriate department of the University of Maryland. Salary and rank will be commensurate with training and experience.

#### SENIOR RESEARCH SCIENTISTS

Senior research scientists should have an established research record and research experience in biotechnology or related disciplines. A demonstrated ability to obtain research support is necessary. Senior research scientists will be expected to qualify for tenure track positions in an appropriate department of the University of Maryland. Salary and rank will be commensurate with training and experience.

For additional information or to submit a resume before 1 July 1985 contact Richard Jarman, Executive Director, Maryland Sea Grant College, College Park, Maryland 20742.

EEO/AA

M/F/H/V



THE UNIVERSITY OF MARYLAND

## POSITIONS OPEN

### THE HOSPITAL FOR SICK CHILDREN DEPARTMENT HEAD EPIDEMIOLOGY/BIOSTATISTICS

The Hospital for Sick Children, one of North America's leading paediatric centres with a strong research focus, and affiliated with the University of Toronto, is establishing a Department of Epidemiology/Biostatistics, and is presently seeking a department head. It is planned to establish a "core" department to which other individuals in the Hospital with substantial epidemiology/biostatistical interests will relate. Cross appointments in the Department of Preventive Medicine and Biostatistics in the University of Toronto are anticipated.

The preferred candidate will have clinical training (M.D.) as well as epidemiological training, with sufficient experience to undertake the responsibility of developing and administering a hospital department involved in research, consultation, service, and teaching. The department will also be expected to provide expertise in consultation relating to a Quality Assurance Program, clinical epidemiological research, and research in medical economics.

Interested candidates should apply, with curriculum vitae and names of three references, to: **The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario, Canada M5G 1X8; attention: Kerr M. Chalmers, Secretary to the Search Committee.**

### MOLECULAR BIOLOGIST

The Research Division of the Joslin Diabetes Center has recently established a Section on Molecular Genetics and embarked on a major project in the molecular biology of the insulin receptor and growth-factor regulation of gene expression. We are seeking a molecular biologist to pursue efforts in these, and other areas, as a faculty member at Harvard Medical School. The successful candidate should be a M.D. or Ph.D. with several years of postdoctoral work in the general area of eukaryotic gene expression. Experience in recombinant DNA technology including molecular cloning and gene transfer is essential. Rank and salary will be commensurate with experience. Send curriculum vitae and three letters of recommendation by 1 June 1985 to: **C. Ronald Kahn, M.D., Director, Research Division, Joslin Diabetes Center, One Joslin Place, Boston, Mass. 02215. An Equal Opportunity/Affirmative Action Employer.**

The Department of Pathology of the University of Illinois has an immediate opening for a Board-certified or Board-eligible **PATHOLOGIST** to be **HEAD** of the Chemical Pathology Laboratories in the Division of Clinical Pathology. Salary and rank dependent upon experience and credentials. The Chemical Pathology Laboratories consist of General, Special, and Stat Chemistry Laboratories, RIA, Toxicology/Pharmacometrics, and Electrophoresis. Inquiries, which should include curriculum vitae, synopsis of current research interests, list of publications, reprints of selected publications, and the names of three references, should be sent to: **Egil Foslien, M.D., Chairman of the Search Committee for Head of Chemical Pathology, Department of Pathology, University of Illinois at Chicago, Division of Clinical Pathology, Box 6998, Chicago, Ill. 60680.**

*Affirmative Action/Equal Opportunity Employer*

**PHYSIOLOGY, FACULTY.** A tenure-track position for an established investigator in cellular physiology or biophysics. Researchers in endocrinology, the study of neurons, muscle, renal, or white blood cells are especially invited to apply. Applications, including curriculum vitae, a brief statement of research interests, and the names of three possible references should be mailed by 1 June 1985 to: **Dr. Robert B. Gunn, Chairman, Department of Physiology, Emory University School of Medicine, Atlanta, Ga. 30322. Emory University is an Equal Opportunity/Affirmative Action Employer.**

**PLANT PHYSIOLOGIST.** A postdoctoral position will become available in the Biological Sciences Center in the last quarter of 1985. The position will study limitations to the rate of photosynthesis using biochemical and gas exchange techniques. Of particular importance are the factors which limit photosynthesis rates under high light and high CO<sub>2</sub>. Requires Ph.D. in plant physiology with emphasis on photosynthesis. Potential for securing funding from granting agencies helpful. Salary: \$20,000; full benefits. Submit résumé and letter of application, postmarked by 15 June 1985, to: **Personnel Department, Desert Research Institute, University of Nevada System, P.O. Box 60220, Reno, Nev. 89506. An Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

**SCIENCE: NEUROSCIENCE RESEARCH POSITIONS** available for postdoctoral scientist interested in adult and/or child psychopathology. Tenure-track available for individual with established competence. Generous benefits, New York State position in Rockland suburb of New York City. Send curriculum vitae to: **Search Committee, Nathan S. Kline Institute for Psychiatric Research, Orangeburg, N.Y. 10962. An Equal Opportunity Employer, M/F.**

**PHYSIOLOGICAL ECOLOGIST** with background in the botanical sciences. Assistant professor position available August 1985. Responsibilities in the first year include two courses in ecology, one basic and one advanced, and a third course in the applicant's speciality. The successful candidate will also supervise undergraduate research projects. Ph.D. required; *women and minorities are encouraged to apply.* Send curriculum vitae, undergraduate and graduate transcripts, and three letters of reference to: **Dr. Robert Chase, Chairman, Search Committee, Department of Biology, LAFAYETTE COLLEGE, Easton, Pa. 18042.**

**PHYSIOLOGIST**—Multi-year, renewable contract position available for Ph.D., D.O., or M.D. to perform **PHYSIOLOGY RESEARCH**, seek outside support and teach part of medical physiology course to medical students. New modern laboratories are available for qualified person with track record and publications. Salary, length of renewable contract, and academic rank commensurate with qualifications. Interested candidates should send curriculum vitae and all supportive evidence (current grant support and grant track record and teaching experience) to: **Search Committee, Dr. Arnold L. Nagler, Associate Dean, Preclinical Medical Education, New York College of Osteopathic Medicine, Old Westbury, New York 11568.**

**POSTDOCTORAL ASSOCIATE.** Department of Applied Physics. To conceive, design, and carry out experiments and analyze data involving the superconducting tunnel junctions on high-T<sub>c</sub> superconducting electrodes and artificial tunnel barriers. Prior experience with deposition and characterization of refractory superconducting thin films, surface-analysis characterization, vacuum deposition technology, and low-temperature electrical measurements is required, in addition to a Ph.D. in physics. Full-time position with salary of \$19,500 per year. Please apply to: **Professor Daniel Prober, Applied Physics, Yale University, P.O. Box 2157, New Haven, Conn. 06520. Yale is an Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL FELLOW.** M.D. or Ph.D. Athrogenesis research involving the role of the central nervous system. Biochemically oriented multidisciplinary project. Experience with cell culture desirable. Available 1 July for 2 years. **W. H. Gutstein M.D., Department of Pathology, New York Medical College, Valhalla, N.Y. 10595. New York Medical College is an Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL FELLOW** in molecular pharmacology/molecular biology. Studies involve effects of DNA interactive antitumor drugs on the structure and function of individual cellular genes, and simian virus 40 minichromosomes. Strong background in biochemistry and DNA methodologies preferred. Stipend is commensurate with experience. Send curriculum vitae, summary of research, and three references to: **Dr. Terry Beerman, Experimental Therapeutics, Roswell Park Memorial Institute, Buffalo, N.Y. 14263.**

**POSTDOCTORAL FELLOW.** Cell biology/biochemistry, with cell culture experience. Interest in culturing healthy and neoplastic gastrointestinal smooth muscle, and studying effects of differentiation and hormonal induction on membrane protein expression. Send curriculum vitae and names of three references to: **Dr. L. J. Miller, Gastroenterology Research Unit, Mayo Medical School, Rochester, Minn. 55905. An Equal Opportunity/Affirmative Action Institution.**

**RESEARCH ASSOCIATE.** Peptide chemist with interest in synthesis of novel and conformationally-restricted peptides with agonist/antagonist activities at biologically relevant targets. Interaction in active multidisciplinary gastrointestinal research group. Send curriculum vitae and names of three references to: **Dr. L. J. Miller, Gastroenterology Research Unit, Mayo Medical School, Rochester, Minn. 55905. An Equal Opportunity/Affirmative Action Institution.**

## POSITIONS OPEN

**POSTDOCTORAL MOLECULAR BIOLOGIST** position available summer 1985. Research on development and hormonal regulation of a mammalian enzyme, involving use of cloned cDNA for study of gene structure, transcription and mRNA processing. Modern research laboratory at university affiliated hospital. Send curriculum vitae to: **Dr. Muriel Feigelson, Director, Obstetrics-Gynecology Basic Research Laboratory, St. Luke's/Roosevelt Hospital, Roosevelt Division, Columbia University, 428 West 59 Street, New York, N.Y. 10019. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available immediately for research concerned with molecular basis for antiviral or anticancer activity of compounds developed in our laboratory. A background in enzymology and nucleic acid biochemistry is desirable. Salary negotiable. Send résumé and names of three references to: **Dr. William H. Prusoff, Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510. An Equal Opportunity/Affirmative Action Employer.**

**TWO POSTDOCTORAL POSITIONS** available immediately to study carcinogen and pesticide metabolism and chemical mutagenesis. Annual salary: \$18,000. The position is for one year, renewable for the second year. Send curriculum vitae and names of three references to: **Dr. S. K. Yang, Department of Pharmacology, F. Edward Hebert School of Medicine, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Maryland 20814-4799. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available immediately to study structure, function and molecular biology of deoxynucleotide metabolizing enzymes in eukaryotic and/or prokaryotic organisms. Clarification of substrate and allosteric binding sites, regulation of gene expression, and effect of site directed mutagenesis on enzyme structure and function are to be undertaken in a well-equipped core facility. Cloning and sequencing experience desirable. Salary commensurate with experience. Send résumé and at least two references to: **Dr. Gladys Maley, Wadsworth Center for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, N.Y. 12201. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available to study control of collagen gene expression during development and in viral transformation of differentiated cells with particular emphasis on RNA processing and translation control. Experience in molecular biology desired. Send curriculum vitae and names, addresses and telephone numbers, of three references to: **Dr. Sherrill L. Adams, University of Pennsylvania Medical School, Human Genetics Department, Richards Building, Philadelphia, Pa. 19104. Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL POSITION IN DEVELOPMENTAL NEUROBIOLOGY AND NEUROTOXICOLOGY

An immediate opportunity for a postdoctoral research position is available in developmental neurobiology and neurotoxicology. The research includes development and differentiation of macroglial cell types, microglial cells and their reaction to injury. The laboratories are also engaged in the study of the effects of heavy metals on growth and development of the CNS. Backgrounds in immunology, immunocytochemistry, isolation and characterization of proteins and biomembranes, cell cultures, and basic morphological techniques will be helpful. Send curriculum vitae and names of references to: **Dr. Ben H. Choi, Division of Neuropathology, Department of Pathology, University of California, Irvine, Irvine, California 92717. An Affirmative Action/Equal Opportunity Employer. Deadline: 24 June 1985.**

**POSTDOCTORAL POSITION**, available after 1 October. Cell biology-physiology-biochemistry laboratory studying isolated cardiac membrane channel proteins seeks immunologist for immunofluorescence and immunoelectron microscopic investigations. Applicant should have doctorate and experience with poly- and monoclonal antibody techniques. Send curriculum vitae, description of research interests, and references to: **Dr. Ernest Page, Department of Medicine, BH Box 137, The University of Chicago, 5841 South Maryland Avenue, Chicago, Illinois 60637. Equal Opportunity/Affirmative Action Employer.**



**THE BIOZENTRUM**  
University of Basel,  
Switzerland  
**seeks to fill a position of**  
**ASSISTANT PROFESSOR**  
**(Projektleiter)**  
**In the Department of**  
**Biochemistry**

Ideally, the candidate's expertise should complement ongoing research in the department (structure, function, and biogenesis of membranes), but the overriding criterion will be scientific quality rather than the area of research. The appointment is for 5 years; after the fourth year, the appointee will be evaluated for possible tenure.

For further information, please contact: either Dr. Max M. Burger or Dr. Gottfried Schatz, Department of Biochemistry, Biozentrum, Klingelberstrasse 70, CH-4056 Basel, Switzerland. Telephone: 61-25 38 80.

**SCIENTIFIC LITERATURE**  
**ANALYSTS**

**TWO POSITIONS AVAILABLE**

*Doctorate degree* in the Biological and/or Medical Sciences or Chemistry or similar.

The MOST IMPORTANT qualification is a PROVEN, OUTSTANDING ABILITY to critically and perceptively ANALYZE published SCIENTIFIC STUDIES, data, meeting presentations and related, in great depth and expeditiously on a peer review or better level.

Maximum intellectual integrity, high intelligence, and open-mindedness essential. Broad scientific background preferred, possibly including chronic diseases, i.e. cancers and/or cardiovascular and/or chronic respiratory, etc. Fast reading comprehension essential. Good writing skills are important, as well as ability to explain complex scientific matters on an intelligent layman's level. Ability to fully understand some foreign language (German, etc.) scientific literature desirable but not necessary. Prefer recent postgraduate with some industrial or academic or editorial or similar experience.

An additional position requiring a B.S. or Master's degree is also available having a thrust similar to what is specified above.

The positions are with a law firm in New York City.

Please send detailed curriculum vitae including college(s), and positions held since graduation, professional references (no contacts will be made without applicant's consent), etc. to:

**BOX 91, SCIENCE**



**THE UNIVERSITY**  
**OF MANITOBA**  
**DEPARTMENT OF**  
**MICROBIOLOGY**

**PROFESSOR AND**  
**HEAD OF DEPARTMENT**

The Department of Microbiology is a constituent department of the Faculty of Science and has broad responsibility for the teaching of microbiology in honours and majors programs in biochemistry and genetics. The department has 12 full-time faculty members and offers M.Sc. and Ph.D. programs in a spectrum of prokaryotic and eukaryotic microbiology, molecular biology, and biochemistry.

The university encourages both women and men to apply for positions. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Deadline for applications is 1 July 1985.*

Applications should be directed to: P. K. Isaac, Chair, Microbiology Headship Selection Committee, University of Manitoba, Faculty of Science, 250 Machray Hall, Winnipeg, Manitoba, Canada R3T 2N2.



**Don't miss the 1985**  
**AAAS Annual Meeting**  
**& Exhibit**

**Science and Engineering:**  
**Diversity and Convergence**

**26-31 May 1985**  
**Los Angeles**

*For further information, see the 8 March or 5 April issues of Science or call (202) 842-9530.*



**Cold Spring Harbor Laboratory**

**1985 COLD SPRING HARBOR**  
**CONFERENCE ON CANCER CELLS**

**DNA Tumor Viruses: Control of Gene Expression**  
**& Replication**

**Wednesday, September 4-Sunday, September 8, 1985**

Organized by

*TERRI GRODZICKER, Cold Spring Harbor Laboratory*  
*PHILLIP SHARP, Massachusetts Institute of Technology*  
*MICHAEL BOTCHAN, University of California, Berkeley*

The 1985 Cold Spring Harbor Conference on Cancer Cells entitled, "DNA Tumor Viruses: Control of Gene Expression and Replication" will be held from Wednesday, September 4, through Sunday, September 8, 1985. We anticipate a schedule with approximately fifty major speakers who will present talks of 20-25 minutes with ample time for discussion.

The meeting will be devoted to a broad discussion of aspects of genetic regulation using SV40, polyoma virus, adenoviruses, papilloma viruses and herpes viruses as model systems. Planned sessions include:

Control of transcription: enhancers and promoters  
Control of transcription: regulatory proteins  
*In vitro* approaches to transcription  
Regulation of RNA processing and translation  
DNA replication and recombination  
Transforming proteins  
Stages of Transformation.

Requests for registration materials should be directed to the Meetings Coordinator, Cold Spring Harbor Laboratory, P.O. Box 100, Cold Spring Harbor, NY 11724.

## POSITIONS OPEN

### POSTDOCTORAL POSITION

A postdoctoral position will be available in September to study the expression of *Drosophila* contractile protein genes in transformed flies and cell-free systems. Experience in recombinant DNA is required. Salary commensurate with experience. Contact: Dr. Robert Storti, Department of Biological Chemistry, University of Illinois at Chicago, College of Medicine, 1853 West Polk Street, Chicago, Illinois 60612.

*The University of Illinois at Chicago is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.*

**POSTDOCTORAL POSITION** available to study extracellular matrix synthesis and remodelling during burn wound repair. Experience in cell culture required; background in proteoglycan, glycosaminoglycan, and collagen biochemistry desirable. Concurrent appointment at Shriners Burns Institute and Massachusetts General Hospital. Send curriculum vitae to: Dr. Charles N. Bertolami, Shriners Burns Institute, 51 Blossom Street, Boston, Mass. 02114.

**POSTDOCTORAL POSITION** available after 1 June to work on the H<sup>+</sup> ATPase (ATP synthase) of rat liver mitochondria. Strong background in either molecular genetics (gene cloning), enzymology and chemical sequencing, or monoclonal antibody technology. The work will be directed at mapping catalytic and regulatory sites of the ATP synthase and elucidating their location in the x-ray map of the enzyme. Interested candidates should submit curriculum vitae, bibliography, and names of three references to: Professor Peter L. Pedersen, Department of Biological Chemistry, Johns Hopkins University, School of Medicine, 725 North Wolfe Street, Baltimore, Maryland 21239. An Equal Opportunity/Affirmative Action Employer.

### DEPARTMENT OF MOLECULAR BIOLOGY RESEARCH INSTITUTE OF SCRIPPS CLINIC LA JOLLA, CALIFORNIA

**POSTDOCTORAL POSITIONS** will be available this summer/fall to work on RNA polymerase III mediated transcription in vitro and the developmental regulation of 5S RNA genes in *Xenopus*. Send curriculum vitae and names of three references to: Dr. Joel Gottesfeld, Department of Molecular Biology, RISC, 10666 North Torrey Pines Road, La Jolla, Calif. 92037. Scripps Clinic is an Equal Opportunity/Affirmative Action Employer, M/F/H.

### POSTDOCTORAL POSITION

A 4-year postdoctoral position is open immediately for an energetic Ph.D. level candidate with experience in molecular biology to study the cell-specific expression of genes in the nematode *Caenorhabditis elegans*. Salary: \$18,000 to \$20,000 per year, plus benefits. Send résumé and three letters of recommendation to: Dr. Michael R. Klass, Biology Department, University of Houston—University Park, Houston, Texas 77004. Telephone: 713-749-1517. Equal Opportunity Employer.

**POSTDOCTORAL POSITION** in Division of Hematology/Oncology, Department of Medicine, available 1 July 1985, for research in relation of T-cell reconstitution, viral infections, and acute graft-versus-host disease following bone marrow transplantation in man. Background in cellular immunology desirable. Competitive salary. Send curriculum vitae and names of three references to: Jan Jansen, M.D., Ph.D., Department of Medicine, Indiana University School of Medicine, Room 379 Clinical Building, 541 Clinical Drive, Indianapolis, Ind. 46223. Indiana University is an Equal Opportunity/Affirmative Action Educator, Employer, and Contractor, M/F.

**POSTDOCTORAL/RESEARCH ASSOCIATE** position is available immediately for a Ph.D. with experience in cell and molecular biology. The applicant will interact with a multidisciplinary group to investigate liposome mediated delivery of proteins and nucleic acids to eucaryotic cells. Training in cell biology, glycoprotein biochemistry, virology, and immunochemistry will be provided. Salary highly competitive. Send curriculum vitae and references to: Drs. Marcus Fechner, Richard Cummings, and Phil Lukert, Departments of Zoology, Biochemistry, and Medical Microbiology, University of Georgia, Athens, Ga. 30602.

## POSITIONS OPEN

**POSTDOCTORAL POSITION.** Position open summer 1985. To study the associative form of long-term potentiation. Methods include extracellular physiology of intact hippocampus and hippocampal explant. Salary consistent with expertise (\$15,000 to \$20,000). Submit curriculum vitae and three references to: Dr. William B. Levy, Department of Neurosurgery, Box 420, University of Virginia School of Medicine, Charlottesville, Va. 22908. An Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION.** The Division of Oncology, Department of Medicine, University Hospital of Zurich, Switzerland. Ph.D. in biochemistry, biology, or related field, to study surface antigens and transformation processes of human respiratory tumors. Duration: 2, possibly 3 years. Experience in purification of membrane antigens, immunochemistry, or recombinant DNA techniques desirable. Please send curriculum vitae and names of three references to: Dr. Rolf A. Stahel, Box 103, SCIENCE.

### POSTDOCTORAL RESEARCH ASSOCIATE

The Department of Neurology, University of Alabama at Birmingham, has an immediate opening for a Ph.D. with experience in protein purification and immunoassays. Applicants must have experience in these areas and will be engaged in research on the degradation and immunochemistry of myelin proteins. Salary is negotiable. Send curriculum vitae and names of references by 31 May 1985 to: John N. Whitaker, M.D., Department of Neurology, University of Alabama at Birmingham, University Station, Birmingham, Ala. 35294. An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE** available 1 September 1985 for 1 year to study the structure and function of eukaryotic and prokaryotic cytochrome c oxidase using recombinant DNA techniques. Ph.D. degree in life or physical sciences required; experience in molecular genetics or biochemistry desirable. Salary: \$16,000 to \$18,000 per year, depending on experience. Closing date for receipt of applications is 1 August 1985. Send curriculum vitae and the names and addresses of three references to: Dr. L. J. Prochaska or Dr. I. M. Leffak, Biological Chemistry, Wright State University, School of Medicine, Dayton, Ohio 45435. Wright State University is an Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH, PLANT MOLECULAR BIOLOGY.** Postdoctoral position in gene transfer and expression in higher plants. Send curriculum vitae and three letters to:

Dr. Gynheung An  
Institute of Biological Chemistry  
Washington State University  
Pullman, Wash. 99164-6340

**POSTDOCTORAL RESEARCH POSITION** available immediately (for 3 years) to study regulation of arachidonic acid metabolism in gestational tissues. Studies include isolation, purification, and characterization of endogenous regulatory proteins. Ph.D. in biological sciences. Background in protein purification and tissue culture desired; experience in molecular biology and/or lipid metabolism helpful. Salary: \$19,000 per year. Please submit curriculum vitae before 21 June 1985 to: Dr. Murray Mitchell, Department of Reproductive Medicine, University of California, San Diego, Medical Center (H-813), 225 Dickinson Street, San Diego, Calif. 92103. The University of California is an Equal Opportunity/Affirmative Action Employer.

### PROFESSOR AND CHAIRPERSON DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH SCIENCES

New Jersey Medical School seeks professor and chairperson of the above department. The candidate must have outstanding academic credentials and demonstrated abilities in administration, teaching, and research. Send curriculum vitae to: Lee B. Reichman, M.D., Chairman, Psychiatry Search Committee, UMDNJ-University Hospital, Department of Medicine, I-354C, 100 Bergen Street, Newark, New Jersey 07103. An Equal Opportunity/Affirmative Action Employer, M/F/H/V.

University of Medicine  
and Dentistry of New Jersey (UMDNJ)

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH POSITIONS IN PEPTIDE SYNTHETIC CHEMISTRY** available immediately for program to develop mild protection strategies for solid-phase peptide synthesis. Send curriculum vitae and at least two reference letters to: Dr. George Barany, Department of Chemistry, University of Minnesota, 207 Pleasant 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.

### PRESIDENT—EDUCATIONAL COMMISSION FOR FOREIGN MEDICAL GRADUATES

Qualifications: knowledge of U.S. and internal medical education, administrative experience in U.S. graduate medical education, demonstrated leadership, understanding of principles of testing of medical knowledge. Responsibilities: chief executive officer, administer programs, develop and maintain effective relationships with medical educational institutions in United States and abroad, foundations, U.S. and foreign government agencies, and other organizations with interests in internal medicine. Address inquiries and applications to: Madison B. Brown, M.D., Chairman, ECFMG Board of Trustees, P.O. Box 8266, Philadelphia, Pa. 19101-8266. Equal Opportunity Employer.

### PROFESSOR AND CHAIRMAN DEPARTMENT OF PHARMACOLOGY

Harvard Medical School invites applications for the position of professor and chairman, Department of Pharmacology. Candidates should have a distinguished record of scholarship and original research in some aspect of cellular or molecular sciences. Qualified women and minority candidates are encouraged to apply. Send curriculum vitae to: Chairman, Pharmacology Search Committee, Office of the Dean, Harvard Medical School, 25 Shattuck Street, Boston, Mass. 02115. Affirmative Action/Equal Opportunity Employer.

The University of Bergen, Norway, invites applications for the position

### PROFESSOR OF BIOTECHNOLOGY

The position is attached to the newly opened Center of Biotechnology. This Center is jointly administered by the Faculty of Medicine and the Faculty of Natural Science. The professor shall teach biotechnology with special emphasis on genetechnology to undergraduate and graduate students and further take part in graduate courses. The yearly salary is N.kr. 215,399 of which N.kr. 3,786 is deducted as pension.

The applicants must submit five complete sets of their scientific papers, printed or in manuscript form, which they wish shall be taken into consideration by the appointment committee. Also to be submitted are six copies of a list of the publications together with five copies of the application itself with the necessary enclosures. The scientific papers can be sent to the medical faculty until one month after the final deadline for the application. Scientific papers which are in process of being completed can be submitted until 3 months after the application deadline on the condition that notice is given concerning this in the application.

Further information regarding terms of the appointment, Center facilities, aspects which will be considered to be important by the appointment committee, and so forth, can be obtained by contacting the medical faculty.

The application, together with curriculum vitae, should be sent to: The Medical Faculty, University of Bergen, P.O. Box 25, 5014 Bergen, Norway, by 1 September 1985.

**Ph.D. RESEARCH ASSOCIATE/ASSISTANT PROFESSOR** position available to carry out connective tissue biochemistry of corneal diseases at the permanently endowed Ophthalmology Research Laboratories of the Cedars-Sinai Medical Center, an UCLA-affiliated hospital. Knowledge of extracellular matrix protein and/or proteoglycan biochemistry, tissue culture experience, supervisory capabilities, and writing skills are necessary. Salary range and benefits are competitive. Starting date after 1 July 1985. Send curriculum vitae to:

Christina Kennedy, Ph.D.  
Ophthalmology Research Laboratories  
Cedars-Sinai Medical Center  
Halper Building, Room 116  
8700 Beverly Boulevard  
Los Angeles, Calif. 90048

## PROCESS DEVELOPMENT SCIENTIST FOR ANIMAL CELL CULTURE

A position is currently available in our Cambridge laboratory for a Process Development Scientist with expertise and skills in the specialty area of animal cell culture.

The successful candidate will have the following qualifications:

- Advanced degree in Biochemical Engineering.
- Experience with various methods for the growth of animal cells.
- Broad-based knowledge of cell biology.
- Experience in large-scale cultivation of animal cells.

Biogen is an international biotechnology company engaged in the development of commercial products through the use of advanced biological science, particularly recombinant DNA and advanced mutational techniques. We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment.

Biogen offers an excellent compensation and benefits package.

Please forward your resume and the names of three references to: Ms. Nanci Pye, Manager of Human Resources, Dept. PD-28, Biogen, 14 Cambridge Center, Cambridge, MA 02142. An equal opportunity employer.

# BIOGEN

## Molecular Biologist - Cancer Research

The Cancer and Viral Diseases Research Department of The Research Division of **The Upjohn Company** is seeking scientists with molecular biology training and experience. Responsibilities include the isolation, characterization, and utilization of cancer-related genes. Significant collaboration with departmental cell biologists and biochemists as well as molecular biologists in related departments is anticipated.

Qualifications include a Ph.D. or equivalent degree in biochemistry, microbiology, or related field with emphasis on the study of the molecular biology of cancer-related genes; postdoctoral experience desirable.

Kalamazoo is a medium-sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational and recreational pursuits, including numerous lakes and a four-season climate. Upjohn offers a stimulating research environment, opportunity for career growth, competitive salary and benefits, and relocation assistance.

**For confidential consideration, please call outside Michigan toll-free 1-800-253-8600, Ext. 3-6767, or inside Michigan collect (616) 323-6767 to request an employment application be sent to you immediately. Please refer to Ad Number 16278-J when calling.**

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## SQUIBB

### CARDIOVASCULAR PHARMACOLOGIST

The Squibb Institute for Medical Research, an established leader in the pharmaceutical industry, has an opening for a Research Scientist in our Pharmacology Department.

The successful candidate will develop, implement, and supervise test for the *in vivo* evaluation of agents with potential therapeutic utility in disorders of cardiovascular function. This position requires a doctoral degree in Cardiovascular Pharmacology or Physiology with a minimum of three years postdoctoral experience in the area of myocardial function.

Located in Princeton, New Jersey, this position offers an attractive salary and benefits package in a pleasant working environment designed to contribute to professional excellence. For prompt confidential consideration, please submit resume, including salary requirements to: **Squibb Institute for Medical Research, Department of Pharmacology, Room A2103/B, P.O. Box 4000, Princeton, New Jersey 08540**. Equal Opportunity Employer.

## POSITIONS OPEN

**PROKARYOTIC GENETICIST.** The University of Massachusetts Medical School announces the availability of a tenure-track position in prokaryotic genetics. Applicants should send curriculum vitae, a short statement of proposed research, and the names of three references to: **Prokaryotic Genetics Search Committee, Department of Molecular Genetics and Microbiology, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605.** The University of Massachusetts is an Equal Opportunity/Affirmative Action Employer. Minority candidates and women are especially encouraged to apply.

### RENAL PHYSIOLOGIST

Ph.D. or M.D., preferably skilled in micropuncture, to join group studying renal kallikrein system. Opportunity also to develop personal research area. Assistant or associate professor rank. Start between July and September 1985. Send curriculum vitae to: **Dr. N. G. Levinsky, Boston University Medical Center (BUMC), 75 East Newton Street, Boston, Mass. 02118.** BUMC is an Affirmative Action Employer.

**RESEARCH ASSISTANT.** Laboratory manager for environmental water analyses, available immediately. M.S. in analytical chemistry or related field required. Experience with autoanalyzer, atomic absorption, and HPLC necessary. Send résumé, transcripts, and three letters of reference to: **Logan A. Norris, Department of Forest Science, Oregon State University, Corvallis, Ore. 97331.** An Equal Opportunity/Affirmative Action Employer. Complies with Section 504 of Rehabilitation Act of 1973.

**RESEARCH ASSISTANT PROFESSORSHIP** for a Ph.D. biochemist to work on the structure and function of cartilage collagens, including their mechanisms of cross-linking, and to develop a program in skeletal tissue research. At least 3 years of relevant research experience is essential. Apply, naming four referees, to:

**Diana Rutledge, Administrator  
Department of Orthopaedic Surgery  
University of Washington  
School of Medicine, RK-10,  
Seattle, Washington 98195**

The University of Washington is an Affirmative Action Employer.

### RESEARCH ASSOCIATE IN MOLECULAR BIOPHYSICS

The Department of Biochemistry, University of Minnesota, invites applications for the position of research associate (annual, renewable appointment) in molecular biophysics. Responsibilities: (i) perform independent research on spectroscopic studies of muscle contractions, (ii) give lectures in graduate-level courses on biophysical spectroscopy, muscle biochemistry, and membrane biochemistry, and (iii) supervise graduate students and teach them laboratory techniques. Experience required: (i) Ph.D. in biophysics, (ii) at least 1 year of research on muscle biochemistry or physiology, and (iii) at least 2 years of research using electron paramagnetic resonance. Applications must be postmarked by 1 June 1985. Send curriculum vitae and three letters of reference to: **Molecular Biophysics Search Committee, Department of Biochemistry, Medical School, University of Minnesota, 4-225 Millard Hall, 435 Delaware Street, SE, Minneapolis, Minnesota 55455.**

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

**RESEARCH SCIENTIST—Ph.D.** Chemist with postdoctoral experience in the following areas: Development of methods for synthesis, chemical modification, and purification of oligonucleotides and enzymes, characterization of enzyme reaction mechanisms using ultraviolet and fluorescence spectroscopy and organic reactants containing radioactive carbon and phosphorus and experience in producing site-directed mutations in DNA to generate mutant enzymes for studies of the enzyme mechanism and in developing modification procedures for DNA for use in medical diagnostic applications. Ph.D. in chemistry and 2 years of experience in the above described research required. Job site: La Jolla, California. Salary: \$38,000 per year. Send this ad and your résumé to: **Job Number 4469, P.O. Box 865, Sacramento, Calif. 92804,** not later than 27 May 1985.

## POSITIONS OPEN

**RESEARCH ASSOCIATE, POSTDOCTORAL** for individual with background in neurobiology. Research project focuses on the marking and tracking of neurons from the acoustic receptors through the central nervous system to the motor outputs of the Noctuid moth, *Heliothis zea*. Previous experience in neuroanatomy and/or neurophysiology desirable. This is an Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA) position. GS-11, salary: \$26,300 for 1 year, with probable renewal for a second year. U.S. citizenship required. *Equal Opportunity Employer.* Send résumé to: **Dr. Herndon R. Agee, Insect Attractants, Behavior, and Basic Biology Research Laboratory, USDA, P.O. Box 14565, Gainesville, Fla. 32604; or telephone: 904-374-5737.**

**RESEARCH GENETICIST/RESEARCH CHEMIST** with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS). Position located at Clay Center, Nebraska. Incumbent will conduct research on genetic basis for disease resistance and genetic linkage of polymorphic traits to parameters associated with efficient livestock production. Incumbent will apply principles of histocompatibility and/or molecular genetics. Career Federal Service, GS-12/13/14 (\$30,549 to \$55,087); salary based on qualifications and experience. *An Equal Opportunity Employer.* For information, contact: **Dr. Larry Cundiff, USDA-ARS-CPA, Meat Animal Research Center, Box 166, Clay Center, Neb. 68933; telephone: 402-762-3241.** For applications, contact: **Lee Triplet, telephone: 201-344-1863.**

**THE DANA FARBER CANCER INSTITUTE** is seeking to fill one **RESEARCH POSITION** at the assistant professor level. Joint appointment will be held in an appropriate department at Harvard Medical School. Candidates should be qualified to develop an interactive research program emphasizing the molecular biology of lymphocyte cell surface antigens, should hold a doctoral degree (M.D. and/or Ph.D.) and, preferably, should have postdoctoral research experience in a related area. Applicants should submit résumé, list of publications, statement of research interests, and the names and addresses of three references to: **Dr. David KiszKiss, Director for Research, DANA-FARBER CANCER INSTITUTE, 44 Binney Street, Boston, Mass. 02115.** An Affirmative Action/Equal Opportunity Employer.

**RESEARCH SCIENTIST—The Massachusetts Institute of Technology (MIT), Department of Applied Biological Sciences,** seeks an individual to join interdisciplinary group working on toxicology of combustion aerosols and sulfur dioxide. Requires Ph.D. in toxicology/environmental health. Should also be familiar with methods of inhalation toxicology, respiratory physiology, aerosol generation, and analysis. Send curriculum vitae and two references to: **Mary O. Amdur, c/o Personnel, E19-238, 77 Massachusetts Avenue, Cambridge, Mass. 02139.** Refer to Job Number R85-684. MIT is an Equal Opportunity/Affirmative Action Employer.

**TUMOR IMMUNOBIOLOGIST—The Department of Pediatrics, Southern Illinois University (SIU) School of Medicine,** invites applications for an assistant professor nontenure-track faculty position. Ph.D. in immunology or related field required. Salary: \$43,000. Applicants may have research experience in one or more of the following areas: surface antigens or tumor cells, polyamines, natural resistance, bone marrow transplantation. Send curriculum vitae and description of research abilities to: **L. G. Thatcher, M.D., Chairman, Department of Pediatrics, SIU School of Medicine, P.O. Box 3926, Springfield, Illinois 62708.** SIU School of Medicine is an Equal Opportunity/Affirmative Action Employer. Applications will be accepted until position is filled.

## TRAVEL GRANTS

**TRAVEL GRANTS** available. The National Science Foundation has made available a limited number of travel grants to support individuals planning to attend the International Symposium on Organic Chemistry of Medicinal Natural Products (IUPAC), Shanghai, China, 10 to 14 November 1985. Contact: **Professor Kathryn A. Parker, Department of Chemistry, Brown University, Providence, Rhode Island 02912 (telephone: 401-863-3590).** Applications must be received by 1 June 1985. Stipends are limited to the cost of airline tickets (Apex fare) and require the use of U.S. flag carriers.

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP** position available immediately for research related to molecular and cell biology of ovarian follicle development and mammalian gametes. Send curriculum vitae and three letters of recommendation to:

**Dr. B. Dunbar  
Department of Cell Biology  
Baylor College of Medicine  
Houston, Tex. 77030**

### MEDICAL ONCOLOGY RESEARCH FELLOWSHIP

Positions available July 1986 for a 3-year fellowship at the Fox Chase Cancer Center. The first year provides extensive clinical management and research experience. The subsequent years are devoted to laboratory research with minimal clinical duties. Laboratory opportunities are available throughout the Center, including the Institute for Cancer Research. General areas of interest include developmental and tumor biology, molecular genetics, viral and clinical carcinogenesis, basic immunology, pharmacology and MRI spectroscopy. Individuals Board-eligible or -certified in internal medicine who are interested in an academic oncology career should contact: **Robert L. Comis, M.D., Medical Director, Fox Chase Cancer Center, Philadelphia, Pa. 19111.**

### RESEARCH METHODOLOGY IN AGING POSTDOCTORAL FELLOWSHIPS

Applications are sought from Ph.D.'s interested in creating and adapting novel mathematical/statistical approaches to modeling behavioral, social, and/or biological aspects of adult development and aging processes. Fellowships, which are sponsored by the National Institute on Aging, can begin summer 1985. Annual stipend depends on years of experience. Send curriculum vitae, summary of research interests and career aspirations and names of three references to: **John R. Nesselrode, College of Human Development, The Pennsylvania State University, University Park, Pa. 16802.** The Pennsylvania State University is an Equal Opportunity/Affirmative Action Employer.

## TRAINEESHIPS

Applications sought for 3-year **TRAINEESHIPS** to begin fall 1985, a multi-disciplinary research/studies on dental caries, leading to M.S., M.P.H. or Ph.D. degrees. Stipend range: \$15,996 to \$30,000 (pending final confirmation of funds), depending on experience. *Equal Opportunity Educator; women and minority applicants encouraged.* Contact: **Dr. L. Messer, 18-214 Moos Tower, University of Minnesota School of Dentistry, Minneapolis, Minn. 55455.**

## 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: **Ph.D.—O.D. Program Director, Admissions Office, Room 20, The New England College of Optometry, 424 Beacon Street, Boston, Mass. 02115.**

## MARKETPLACE

### FOR SALE: SCANNING ELECTRON MICROSCOPE AND FREEZE FRACTURE MACHINE.

JEOL Model S35U complete scanning electron microscope in excellent condition; used very little; under continuous JEOL service contract. Price—\$25,000; can arrange packing, shipping and installation by JEOL.

Balzers Freeze Fracture, 1969 Model BA360M; complete high vacuum unit for freeze fracturing and etching biological specimens; electron gun and quartz crystal monitor compatible, but not included. Price \$3,000.

Telephone **Dr. Elizabeth Hay, Chairman, at 617-732-1651; or Dr. Betsey Williams, Assistant Director, at 617-732-1744.** Department of Anatomy and Cellular Biology, Harvard Medical School, 25 Shattuck Street, Boston, Mass. 02115.



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# DIRECTOR

## BIOTECHNOLOGY RESEARCH INSTITUTE

### MONTREAL

#### The Organization

The National Research Council of Canada is establishing a new Biotechnology Research Institute in Montreal. This new research institute emphasizes the industrial applications of biological sciences and focuses on the development of new processes and products. It fosters generic research and technology transfer to industry and promotes communication and collaboration amongst industrial, university, federal and provincial government laboratories.

#### The Research Areas

The main areas of research include:

- Fermentation and biochemical and process engineering
- Genetic engineering
- Cell fusion and molecular immunology
- Enzyme technology and protein engineering

A major large scale fermentation facility will allow pilot scale experimentation with new fermentation methods and economic evaluation. The R&D will focus on agrofood, energy treatment and chemicals, pharmaceuticals, waste product and forestry.

#### The Position

The Director reports to the Vice-President (Biotechnology and Chemistry) and is an active contributor to the National Biotechnology Program. The Director is responsible for planning, organizing, implementing and controlling the Institute's research and development programs and advises senior management on long term research goals. The Director is also responsible for establishing close ties with universities and industries and undertaking research projects on a cooperative basis.

#### The Candidate

The person appointed will have an established reputation for outstanding leadership in research and development and the ability to lead, manage and coordinate the activities of the Institute. Candidates will have many years of research experience in a biotechnology-related discipline and demonstrated ability in research management. Knowledge of both the English and French languages is essential.

#### The Institute

The Biotechnology Research Institute is located in downtown Montreal in a new \$60 million, 18,000m<sup>2</sup> complex. It will employ 220 people and will host up to 80 researchers from industries, universities and other research organizations. It will have an annual budget of \$35 million.

BENEFITS are fully competitive and SALARY will be commensurate with qualifications and experience.

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PLEASE SEND A DETAILED RÉSUMÉ IN CONFIDENCE TO THE:

General Manager, Personnel Branch  
National Research Council of Canada  
Ottawa, CANADA K1A 0R6



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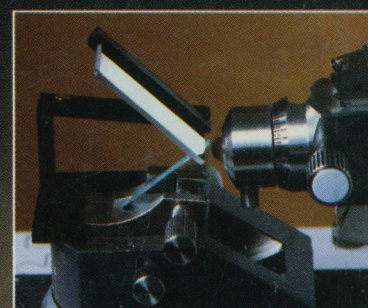


# THE RIGHT STUFF

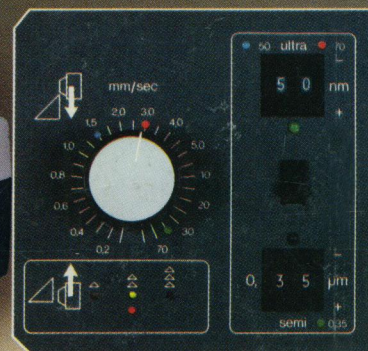
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