

Cell biology and biochemistry have outlined the general framework for growth regulation, and the study of transforming viruses has provided the molecular biology and many of the genes that play critical roles in growth regulation. To date transforming genes have been found to be related to growth factors, growth factor receptors, presumed signal transducers in growth factor regulation, and transcriptional regulators of genes implicated in growth. These two books, though similar in scope, deal with the relationships between growth factors and oncogenes in contrasting and complementary ways. One book treats several specific topics in depth, whereas the other is global and summational in approach.

In *Oncogenes, Genes, and Growth Factors* the emphasis is more on growth factors than on oncogenes. The book contains 12 balanced and detailed reviews that cover several of the known growth factors. There are excellent chapters on platelet-derived growth factor (PDGF), epidermal growth factor (EGF), nerve growth factor (NGF), transforming growth factors (TGFs), interleukin-3 (IL-3) and granulocyte-macrophage colony-stimulating factor (GM-CSF), erythropoietin, interleukin-2 (IL-2), and transferrin. The chapters describe the development of knowledge about growth factors and provide details of their structures from biochemical studies and from gene cloning.

In addition, there are chapters on the growth-factor receptor genes for EGF, IL-2, and transferrin. The chapters dealing with the EGF receptor and transferrin receptor genes provide an introduction to the isolation, characterization, and cloning of the genes as well as the relationship of the EGF receptor to the *erbB* transforming gene. With regard to the chapter on the IL-2 receptor, the authors appropriately note that only half or less of the story is in and that understanding the structure of this receptor will require the identification and purification of a second chain. Nevertheless, the authors have reviewed the early studies and current research on the beta chain of the receptor, which is detected by the anti-TAC monoclonal antibody.

Perhaps appropriately, the last chapter is about the interactions of peptide growth factors and oncogenes. The authors initially review the cell biology relating to the concepts of competence and progression. Next they discuss the role of growth factors in competence and progression, and finally they consider the relationship of oncogenes such as *myc* and *fos* to growth factor inducible genes. The rate at which new information is being generated in this area is attested to by the presence of five sections as an addendum to the chapter. Nevertheless, the

chapter is useful for its treatment of the development of many of the concepts that are being currently pursued.

The editors of *Oncogenes and Growth Control* set out to "produce a collection of mini-reviews which present an overview of the current concepts without a lengthy description of the primary data." This goal has been admirably fulfilled. The 47 papers in the book are arranged in six sections. The editors have written a short introduction to each section that helps the reader to appreciate and integrate the sometimes diverse subjects covered. They have also included a summary table of the oncogenes discussed in the book to assist those not yet acquainted with the three-letter code that pervades the field.

The sections in the book vary considerably in size and emphasis. The first section deals with growth factors and proto-oncogenes in development and differentiation. The three reviews in this section collectively provide a brief but detailed survey of the role of proto-oncogenes in development. The second section treats growth factors, receptors, and related oncogenes and contains 14 reviews. Within this section several growth factors (hematopoietic growth factors, PDGF, TGFs, EGF) and growth factor receptors (EGFr, CSF-1r, IL-2r) are reviewed irrespective of whether they were ever transduced into a transforming virus. In addition, reviews on *abl*, *mos*, and *src* are included. The third section deals with the role of proto-oncogenes in signal transduction mechanisms and contains nine mini-reviews. The editors have included in this section reviews covering protein kinase C, the phosphatidylinositols, and G proteins in addition to the more familiar oncogene topics *ras* and tyrosine phosphorylation. The fourth section deals with the nuclear oncogenes and the regulation of gene expression. Here the editors have included chapters on biological systems such as the regulation of globin gene expression and the regulation of gene expression by steroid hormones that, although they do not directly involve oncogenes, provide a framework in which to view the possible role of proto-oncogenes.

The fifth section deals with the idea that fully malignant transformation often, if not always, involves multiple individual transforming events that affect different cellular functions. Chapters examining this in the malignant transformation of fibroblasts, hematopoietic cells, epidermal cells, B cells, and in tumor progression give details of the hypotheses and mechanisms currently under investigation. The final section, consisting of one chapter, considers oncogenesis in transgenic mice.

In summary, both books are of consider-

able value as reference sources. *Oncogenes, Genes, and Growth Factors* is particularly useful because of the detailed information it provides on a number of the well-characterized growth factors. In contrast, *Oncogenes and Growth Control* is valuable because it furnishes an overview of the expansive area of oncogene research and its integration with research on the regulation of growth and differentiation. The "mini-review" format with its emphasis on summary tables that give a lot of information in a relatively small space is a nice change from the more conventional form of review.

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Books Received

Advances in Elastomers and Rubber Elasticity. Joginder Lal and James E. Mark. Plenum, New York, 1986. x, 444 pp., illus. \$79.50. From a symposium, Chicago, IL, Sept. 1985.

Advances in Organic Geochemistry 1985. D. Leythaeuser and J. Rullkötter, Eds. Pergamon Journals, Oxford, U.K., 1986. Part 1, Petroleum Geochemistry. xii pp. + pp. 1-647, illus., + index. \$75. Part 2, Molecular and General Organic Geochemistry. vi pp. + pp. 649-1142, illus., + index. \$75. From a meeting, Jülich, F.R.G., Sept. 1985. Also published as *Organic Chemistry*, vol. 10, nos. 1-6.

The Aerobiological Pathway of Microorganisms. C. S. Cox. Wiley-Interscience, New York, 1987. xii, 293 pp., illus. \$59.95.

The African Frontier. The Reproduction of Traditional African Societies. Igor Kopytoff, Ed. Indiana University Press, Bloomington, IN, 1987. viii, 288 pp. \$35.

Agriculture and the Environment. Tim T. Phipps, Pierre R. Crosson, and Kent A. Price, Eds. National Center for Food and Agricultural Policy. Resources for the Future, Washington, DC 20036. xviii, 298 pp., illus. Paper, \$11.50. Based on a conference, April 1986.

Agriculture's Futures. America's Food System. L. Tim Wallace. Springer-Verlag, New York, 1987. x, 93 pp., illus. Paper, \$19. Reprinted from *Applied Agricultural Research*, vol. 1.

Algebra and Geometry. With Analytic Geometry. Karl J. Smith. Brooks/Cole, Monterey, CA, 1987. viii, 568 pp., illus. \$36.

Algebraic D-Modules. A. Borel et al. Academic Press, Orlando, FL, 1987. xii, 355 pp., illus. \$29.95. Perspectives in Mathematics, vol. 2.

α -Aminoacid-N-Carboxy-Anhydrides and Related Heterocycles. Syntheses, Properties, Peptide Synthesis, Polymerization. Hans Rytger Kircheldorf. Springer-Verlag, New York, 1987. x, 213 pp., illus. \$88.

Amorphous and Liquid Materials. E. Lüscher, G. Fritsch, and G. Jacucci, Eds. Nijhoff, Dordrecht, Netherlands, 1987 (U.S. distributor, Kluwer, Norwell, MA). xii, 521 pp., illus. \$92. From an institute, Passo della Mendola, Italy, Aug.-Sept. 1985. NATO Advanced Science Institutes Series E, no. 118.

Cell Separation. Methods and Selected Applications. Vol. 4. Thomas G. Pretlow II and Theresa P. Pretlow, Eds. Academic Press, Orlando, FL, 1987. xii, 386 pp., illus. \$59.50.

Chemical Analysis in Environmental Research. A. P. Rowland, Ed. Institute of Terrestrial Ecology, Abbots Ripton, U.K., 1987. 104 pp., illus. Paper, £7. From a symposium, Grange-over-Sands, U.K., Nov. 1985.

Chemical Signalling in Living Systems. Vol. 1, Summary of Principles. Alfred T. Kornfield. Biosearch Press, Drexel Hill, PA, 1987. Various pages. \$30.

Chiefdoms in the Americas. Robert D. Drennan and Carlos A. Uribe, Eds. University Press of America, Lanham, MD, 1987. xx, 390 pp. \$32.50; paper, \$18.75. From a symposium, Bogotá, Colombia, July 1985.

- Classification of Remotely Sensed Images.** Ian L. Thomas, Vivien M. Benning, and Neville P. Ching. Hilger, Bristol, U.K., 1987 (U.S. distributors, Taylor and Francis, Philadelphia). xii, 268 pp., illus. \$65.
- Clastic Particles.** Scanning Electron Microscopy and Shape Analysis of Sedimentary and Volcanic Clasts. John R. Marshall, Ed. Van Nostrand Reinhold, New York, 1987. xiv, 346 pp., illus. \$58.95.
- Clinical Neuroendocrinology.** Joseph B. Martin and Seymour Reichlin. 2nd ed. Davis, Philadelphia, 1987. xx, 759 pp., illus. \$79. Contemporary Neurology Series, 28.
- Color Encyclopedia of Gemstones.** Joel E. Arem. 2nd ed. Van Nostrand Reinhold, New York, 1987. viii, 248 pp. + plates. \$49.95.
- Combustion.** Irvin Glassman. 2nd ed. Academic Press, Orlando, FL, 1987. xxi, 501 pp., illus. \$49.50.
- A Course in Galois Theory.** D. J. H. Garling. Cambridge University Press, New York, 1987. viii, 167 pp., illus. \$39.50; paper, \$14.95.
- The Craft of Scientific Writing.** Michael Alley. Prentice-Hall, Englewood Cliffs, NJ, 1987. xii, 225 pp., illus. \$27.95.
- The Cretaceous-Tertiary Boundary in the San Juan and Raton Basins, New Mexico and Colorado.** James E. Fassett and J. Keith Rigby, Jr., Eds. Geological Society of America, Boulder, CO, 1987. iv, 200 pp., illus., + pocket plates. Paper, \$28.50. Special Paper 209.
- The Crustacean Stomatogastric System.** A Model for the Study of Central Nervous Systems. Allen I. Selverston and Maurice Moulins, Eds. Springer-Verlag, New York, 1987. xvi, 338 pp., illus. \$113.80. Based on a symposium, San Diego, CA, Oct. 1984.
- Current Topics on Non-Crystalline Solids.** M. D. Baró and N. Clavaguera, Eds. World Scientific, Singapore, 1986 (U.S. distributor, Taylor and Francis, Philadelphia). xviii, 457 pp., illus. \$53. From a workshop, Sant Feliu de Guixols, Spain, May 1986.
- Current Trends in Matrix Theory.** Frank Uhlig and Robert Grone, Eds. North-Holland (Elsevier), New York, 1987. xii, 432 pp., illus. \$65. From a conference, Auburn, AL, March 1986.
- Forging the Atomic Shield.** Excerpts from the Office Diary of Gordon E. Dean. Robert M. Anders, Ed. University of North Carolina Press, Chapel Hill, NC, 1987. xxxii, 309 pp. \$27.95.
- Geomechanical Modelling in Engineering Practice.** R. Dungar and J. A. Studer, Eds. Balkema, Boston, 1986. xii, 400 pp., illus. \$80.
- The Grenville Province.** J. M. Moore, A. Davidson, and A. J. Baer, Eds. Geological Association of Canada, St. John's, Newfoundland, 1986. vi, 358 pp., illus. \$C49; to GAC members, \$C41. Geological Association of Canada Special Paper 31.
- An Informal Introduction to Theoretical Fluid Mechanics.** James Lighthill. Oxford University Press, New York, 1986. xii, 260 pp., illus. \$35. Institute of Mathematics and Its Applications Monograph Series, no. 2.
- Information Technology and People.** Designing for the Future. Frank Blackler and David Osborne, Eds. British Psychological Society, Leicester, U.K. (U.S. distributor, MIT Press, Cambridge, MA). viii, 262 pp. \$30.
- Innovation in the Soviet Chemical Industry.** Selected Papers with Analysis. Katherine E. Young, Ed. Delphic Associates, Falls Church, VA, 1987. viii, 194 pp. Paper, \$27.50. Translated from the Russian by Peter Sargent.
- Insect Dormancy.** An Ecological Perspective. H. V. Danks. Biological Survey of Canada (Terrestrial Arthropods), Ottawa, 1987. x, 439 pp., illus. \$C50. Biological Survey of Canada Monograph Series, no. 1.
- Insects and the Plant Surface.** Barrie Juniper and Richard Southwood, Eds. Arnold, Baltimore, MD, 1986. vii, 360 pp., illus. \$64.50.
- Linguistics as a Science.** Victor H. Yngve. Indiana University Press, Bloomington, IN, 1986. viii, 120 pp. \$25; paper, \$9.50.
- Living Invertebrates.** Vicki Pearse *et al.* Blackwell Scientific, Palo Alto, CA, and Boxwood Press, Pacific Grove, CA, 1987. xiv, 848 pp., illus. \$45.
- Manufacturing Engineering.** Principles for Optimization. Daniel T. Koehnig. Hemisphere (Harper and Row), New York, 1987. xii, 348 pp., illus. \$45.75.
- Mechanisms of Inorganic and Organometallic Reactions.** Vol. 4. M. V. Twigg, Ed. Plenum, New York, 1986. xx, 536 pp., illus. \$79.50.
- Metabolic Arrest and the Control of Biological Time.** Peter W. Hochachka and Michael Guppy. Harvard University Press, Cambridge, MA, 1987. xvi, 227 pp., illus. \$27.50.
- The Neuro-Immune-Endocrine Connection.** Carl W. Cotman *et al.*, Eds. Raven, New York, 1987. xvi, 150 pp., illus. \$45. From a meeting, New York, April 1985.
- The New Alliance.** America's R&D Consortia. Dan Dimanescu and James Botkin. Ballinger (Harper and Row), Cambridge, MA, 1986. xxii, 209 pp. \$29.95.
- Particles and Nuclei.** Essays in Honor of the 60th Birthday of Professor Yoshio Yamaguchi. H. Terazawa, Ed. World Scientific, Singapore, 1986 (U.S. distributor, Taylor and Francis, Philadelphia). xii, 343 pp., illus. \$49.
- Particulate and Multiphase Processes.** Teoman Ariman and T. Nejat Veziroglu, Eds. Three volumes. Vol. 1, General Particulate Phenomena. xxvi, 932 pp., illus. \$133. Vol. 2, Contamination Analysis and Control. xxvi, 760 pp., illus. \$131. Vol. 3, Colloidal and Interfacial Phenomena. xxiv, 544 pp., illus. \$131. Hemisphere (Harper and Row), New York, 1987. From symposia, Miami Beach, FL, April 1985.
- Photomorphogenesis in Plants.** R. E. Kendrick and G. H. M. Kronenberg, Eds. Nijhoff, Dordrecht, 1986 (U.S. distributor, Kluwer, Norwell, MA). xxviii, 580 pp., illus. \$156.50.
- Photons and Continuum States of Atoms and Molecules.** N. K. Rahman, C. Guidotto, and M. Allegrini, Eds. Springer-Verlag, New York, 1987. x, 289 pp., illus. \$59.30. Springer Proceedings in Physics, vol. 16. From a workshop, Cortona, Italy, June 1986.
- Photosynthesis.** D. O. Hall and K. K. Rao. 4th ed. Arnold, Baltimore, MD, 1987. vi, 122 pp., illus. Paper, \$9.95. New Studies in Biology.
- Physical Chemistry of Colloids and Macromolecules.** Bengt Ranby, Ed. Blackwell Scientific, Palo Alto, CA, 1987. viii, 161 pp., illus. \$25.50. International Union of Pure and Applied Chemistry. From a symposium, Uppsala, Sweden, Aug. 1984.
- The Physics of Atmospheres.** John T. Houghton. 2nd ed. Cambridge University Press, New York, 1986. xvi, 271 pp., illus. \$54.50; paper, \$16.95.
- Pipelines and Permafrost.** Science in a Cold Climate. Peter J. Williams. 2nd ed. Carleton University Press, Ottawa, 1986 (distributed by Oxford University Press Canada, Toronto). x, 129 pp., illus. Paper, \$9.95.
- Polyimides.** Thermally Stable Polymers. M. I. Besonov *et al.* Consultants Bureau (Plenum), New York, 1987. xiv, 318 pp., illus. \$75. Macromolecular Compounds. Translated from the Russian by L. V. Backinowsky and M. A. Chlenkov. W. W. Wright, translation editor.
- Polymers in Medicine II.** Biomedical and Pharmaceutical Applications. E. Chiellini *et al.*, Eds. Plenum, New York, 1986. x, 434 pp., illus. \$79.50. Polymer Science and Technology, vol. 34. From a conference, Capri, Italy, June 1985.
- Positive Strand RNA Viruses.** Margo A. Brinton and Roland R. Rueckert, Eds. Liss, New York, 1987. xxii, 605 pp., illus. \$94. UCLA Symposia on Molecular and Cellular Biology, vol. 54. From a symposium, Keystone, CO, April 1986.
- Potentials and Limitations of Ecosystem Analysis.** E.-D. Schulze and H. Zwölfer, Eds. Springer-Verlag, New York, 1987. xii, 435 pp., illus. \$98. Ecological Studies, vol. 61.
- A Practical Introduction to Denotational Semantics.** Lloyd Allison. Cambridge University Press, New York, 1987. xii, 132 pp., illus. \$34.50; paper, \$10.95. Cambridge Computer Science Texts, vol. 23.
- Progress in Photosynthesis Research.** J. Biggins, Ed. Nijhoff, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). Four volumes. Vol. 1, xvi, 754 pp., illus. Vol. 2, xxvii, 826 pp., illus. Vol. 3, xxvi, 848 pp., illus. Vol. 4, xxviii, 858 pp., illus. \$662. From a congress, Providence, RI, Aug. 1986.
- Proteins of Excitable Membranes.** Bertil Hille and Douglas M. Fambrough, Eds. Wiley-Interscience, New York, 1987. xvi, 331 pp., illus. \$59.95. Society of General Physiologists Series, vol. 41. Based on a symposium, 1985.
- The Psychology of Illustration.** Vol. 1, Basic Research. Dale M. Willows and Harvey A. Houghton, Eds. Springer-Verlag, New York, 1987. xvi, 214 pp., illus. \$42.50.
- Quantitative Chemical Analysis.** Daniel C. Harris. 2nd ed. Freeman, New York, 1987. xviii, 818 pp., illus. \$43.95.
- Quantum Chemistry of Atoms and Molecules.** Philip S. C. Matthews. Cambridge University Press, New York, 1987. viii, 167 pp., illus. \$44.50.
- Quantum Mechanics.** Hiroomi Umezawa and Giuseppe Vitiello. Bibliopolis, Naples, 1986. viii, 278 pp. Paper, \$25. Monographs and Textbooks in Physical Science: Lecture Notes.
- Recent Developments in Alcoholism.** Marc Galanter, Ed. Vol. 5, Memory Deficits, Sociology of Treatment, Ion Channels, Early Problem Drinking. Plenum, New York, 1987. xx, 458 pp., illus. \$65.
- Reflection Seismology.** A Tool for Energy Resource Exploration. Kenneth H. Waters. 3rd ed. Wiley-Interscience, New York, 1987. xvi, 538 pp., illus. \$59.95.
- Regulatory Idiotopes.** Constantin A. Bona. Wiley-Interscience, New York, 1987. xviii, 279 pp., illus. \$59.95. Modern Concepts in Immunology, vol. 2.
- Reluctant Warriors.** The United States, the Soviet Union, and Arms Control. Coit D. Blacker. Freeman, New York, 1987. xiv, 193 pp., illus. Paper, \$12.95.
- Reproduction in Mammals.** Book 5, Manipulating Reproduction. C. R. Austin and R. V. Short, Eds. 2nd ed. Cambridge University Press, New York, 1986. xii, 235 pp., illus. \$44.50; paper, \$15.95.
- Research and Development in Expert Systems III.** M. A. Bramer, Ed. Cambridge University Press, New York, 1987. vii, 277 pp., illus. \$39.50. From a conference, Brighton, U.K., Dec. 1986. British Computer Society Workshop Series.
- Respiratory Muscles and Their Neuromotor Control.** Gary C. Sieck, Simon C. Gandevia, and William E. Cameron, Eds. Liss, New York, 1987. xx, 477 pp., illus. \$75. Neurology and Neurobiology, 26. From a symposium, Los Angeles, CA, July 1986.
- Reviews of Environmental Contamination and Toxicology.** Vol. 98. George W. Ware, Ed. Springer-Verlag, New York, 1987. x, 166 pp., illus. \$39. Continuation of *Residue Reviews*.
- Robot Control (SYROCO '85).** L. Basañez, G. Ferraté, and G. N. Sardis, Eds. Published for the International Federation of Automatic Control by Pergamon Press, New York, 1986. xiv, 561 pp., illus. \$150. IFAC Proceedings Series. From a symposium, Barcelona, Nov. 1985.
- Strings, Lattice Gauge Theory and High Energy Phenomenology.** V. Singh and S. R. Wadia, Eds. World Scientific, Singapore, 1987 (U.S. distributor, Taylor and Francis, Philadelphia). xii, 598 pp., illus. \$79. Jan.-Feb. 1986. Tata Institute of Fundamental Research, Bombay, India. From a school, Panchgani, India.
- Technological Development in China, India and Japan.** Cross-Cultural Perspectives. Erik Baark and Andrew Jamison, Eds., St. Martin's, New York, 1986. xii, 264 pp., illus. \$32.50.
- A Textbook of Histology.** Don W. Fawcett. 11th ed. Saunders, Philadelphia, PA, 1986. xii, 1017 pp., illus. \$49.95.
- A Textbook of Modern Toxicology.** Ernest Hodgson and Patricia E. Levi. Elsevier, New York, 1987. xx, 386 pp., illus. \$39.50.
- The Thermodynamics and Gas Dynamics of Internal-Combustion Engines.** Vol. 2. J. H. Horlock and D. E. Winterbone, Eds. Clarendon (Oxford University Press), New York, 1986. xlviii pp. + pp. 583-1237, illus. \$135.
- They All Laughed at Christopher Columbus.** Tales of Medicine and the Art of Discovery. Gerald Weissmann. Times Books, New York, 1987. xviii, 270 pp. \$17.95.
- Top-Down Calculus.** A Concise Course. S. Gill Williamson. Computer Science Press, Rockville, MD, 1987. xvi, 429 pp., illus. \$25.95. Computers and Math Series, 11.
- Topics in Geophysical Fluid Dynamics.** Atmospheric Dynamics, Dynamo Theory, and Climate Dynamics. M. Ghil and S. Childress. Springer-Verlag, New York, 1987. xvi, 485 pp., illus. Paper, \$39. Applied Mathematical Sciences, vol. 60.
- Topographic Histochemistry of the Cerebellum.** 5'-Nucleotidase, Acetylcholinesterase, Immunology of FAL. Enrico Marani in cooperation with A. J. P. Boesten, B. Brown, and A. H. Epema. Fischer, New York, 1986. x, 170 pp., illus. Paper, \$70.50. Progress in Histochemistry and Cytochemistry, vol. 16, no. 4.
- Topological and Geometrical Methods in Field Theory.** J. Hietarinta and J. Westerholm, Eds. World Scientific, Singapore, 1986 (U.S. distributor, Taylor and Francis, Philadelphia). x, 448 pp., \$72. From a symposium, Espoo, Finland, June 1986.
- Transcriptional Control Mechanisms.** Daryl Graner, Michael G. Rosenfeld, and Shing Chang, Eds. Liss, New York, 1987. xx, 496 pp., illus. \$78. UCLA Symposium on Molecular and Cellular Biology, vol. 52. From a symposium, Keystone, CO, April 1986.
- Women, Fire, and Dangerous Things.** What Categories Reveal about the Mind. George Lakoff. University of Chicago Press, Chicago, 1987. xviii, 614 pp., illus. \$29.95.
- Women's Lives.** Themes and Variations in Gender Learning. Bernice Lott. Brooks/Cole, Monterey, CA, 1987. xii, 367 pp., illus. Paper, \$21.75.
- The Wright Flyer.** An Engineering Perspective. Howard S. Wolko, Ed. Published for the National Air and Space Museum by the Smithsonian Institution Press, Washington, DC, 1987. x, 106 pp., illus. Paper, \$9.95. From a symposium, Washington, Dec. 1983.

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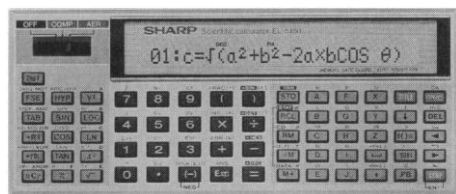
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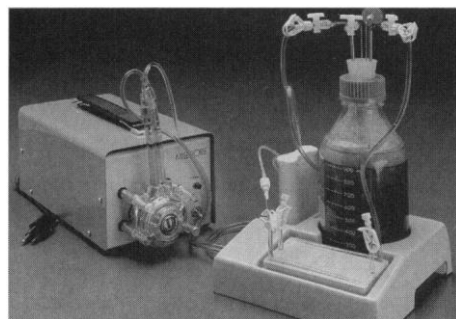
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Literature

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POSITIONS WANTED

American Biochemist, M.S. Eight years of research experience in neuropharmacology, enzymology, and dermal anatomy and physiology. Experienced with TLC, HPLC, PC, electrophoresis, tissue culture and animal surgery. Seeking overseas research or teaching position in Mid-East. Box 125, SCIENCE.

Biochemist/Cell Biologist, Ph.D., 1980. Experienced in cell culture techniques, purification and characterization, or proteins and enzymes. Enzymology, protein chemistry, protein sequencing, HPLC, TLC, EIA, RIA. Folate and pteridine biochemistry. Drug inhibition screening and resistance. Cloning, lymphocyte works, and so forth. Seeks research position. Box 118, SCIENCE.

Clinical Research Biostatistician—M.A. Six years of experience in medical school/hospital-based statistical research: design of experiments, research database management (dBASE III Plus, FORTRAN) and analysis (BMDP, SAS, SPSS) using micros and mainframes. Bibliography available. U.S. citizen. Non-smoker. Box 109, SCIENCE.

POSITIONS WANTED

Biophysical Chemist with Organic Chemistry Ph.D. Many years of academic research experience plus publications in biochemistry, pharmacology, and chemistry. Areas include synthesis of anti-tumor agents; functional reconstitution of transport proteins; anesthetic/membrane interactions; preparation and uses of liposomes for membrane studies. Strong background in spectroscopic techniques. Teaching experience in chemistry and biochemistry. Seeks challenging position in research/administration (Northeast preferred). Box 120, SCIENCE.

Flow Cytometry expert experienced in cell sorting, tumor immunology, cell activation, membrane potential, cell cycle, and receptor binding; available full-time or consulting; U.S. or worldwide. Box 7850, Stanford, CA 94305. Telephone: 415-366-4336.

Hybridoma Specialist, B.S. Seven years of experience (academia and industry) in monoclonal antibody technologies, tissue culture, antibody characterization, purification, cloning, ascites production, RIA, ELISA, fluorescence assays, cell surface marker analysis (FACS, Spectrum), chemical conjugations, HPLC, ion exchange chromatography, SDS-PAGE, radio-iodination. Proven troubleshooter. Excellent communication skills. Numerous publications. Seeks challenging position. Box 126, SCIENCE.

Ph.D. Experienced lipid biochemist, nutritionist, neurochemist, seeks teaching or research position in College. American citizen. Dr. Khan, Box 1486, Hawthorne, CA 90251-1486.

POSITIONS OPEN

ASSISTANT COMMISSIONER for Division of Research Programs with the Texas Higher Education Coordinating Board. Position available immediately to administer \$60-million basic and applied research programs. Master's degree, plus 7 years of experience in higher education, government, or research administration with 2 years in a supervisory capacity. Doctorate preferred. Salary \$45,000 to \$50,000 annually. Send résumé postmarked by 14 September 1987 to: **Coordinating Board, Personnel Office, P.O. Box 12788, Austin, TX 78711.** An Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

ASSISTANT PROFESSOR OF ANATOMY—The Department of Anatomy, University of Wisconsin-Madison, invites applications for a 12-month tenure-track position to begin on or after 1 July 1988. Applicants must have a doctoral degree and postdoctoral training. The department seeks candidates with experience in current approaches to problems in cell biology. The successful candidate will be expected to establish an independent research program, teach medical histology, and participate in one of the interdepartmental graduate training programs. Send curriculum vitae, list of publications, three letters of recommendation and a summary of research interest to: **Dr. John K. Harting, Chairman, Department of Anatomy, University of Wisconsin-Madison, Room 325 S.M.I., 1300 University Avenue, Madison, WI 53706.** The deadline for applications is 1 October 1987. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR—PHARMACOLOGY/TOXICOLOGY. Tenure-track positions are open at the level of assistant professor for outstanding investigators interested in basic pharmacological research and teaching. Preference will be given to the following individuals: **Cardiovascular pharmacologists** interested in (i) drug actions at the tissue/cellular level, or (ii) ionic channel function and regulation in cardiac/smooth muscle cells (experience with patch clamp techniques for whole-cell and single-channel recording); **Neuropharmacologists** capable of utilizing modern techniques of molecular biology and biochemistry (e.g., to study receptor-second messenger systems, neuropeptides). Applicants should send curriculum vitae, a statement of research plans, and three letters of reference to: **K. E. Moore, Ph.D., Chairman, Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR OF BIOCHEMISTRY

Applications are invited for a tenure-track position at the level of assistant professor to begin 1 July 1988. Candidates should have a commitment to teaching and the ability to develop and maintain a vigorous and creative research program in biochemistry, molecular biology, or biophysics. Potential for collaboration exists with scientists of this and other departments of the medical school in a research environment that includes the Oregon Regional Primate Research Center, the Portland Shriners Hospital Research Unit, and the new Vollum Institute for Advanced Biomedical Research. Applicants should send curriculum vitae, bibliography, reprints of representative papers, a summary of career goals and research plans, and names of three references to: **Richard T. Jones, Chairman of Biochemistry, School of Medicine, L224, Oregon Health Sciences University (OHSU), 3181 Southwest Sam Jackson Park Road, Portland, OR 97201.** All applications received by 1 October 1987, will be considered. *Women and minority candidates are especially invited to apply. OHSU is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR DEPARTMENT OF BIOCHEMISTRY UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE

Candidates for assistant professor (tenure track) must hold a Ph.D. or equivalent degree, have several years of postdoctoral training, and have demonstrated high quality research and teaching abilities. Preference will be given to individuals using contemporary methods of biochemistry and molecular biology, including techniques utilizing recombinant DNA, site-directed mutagenesis, or monoclonal antibodies. The department has core facilities for nucleic acid and protein sequencing and synthesis. The successful applicant will be expected to develop and maintain an independent, funded research program, and to participate in the training of graduate students, medical students, and dental students. Interested individuals should submit curriculum vitae, a list of at least four professional references, and a brief statement of research interests to: **Dr. Gregory S. Schultz, Chair of Search Committee, Department of Biochemistry, University of Louisville School of Medicine, Health Sciences Center, Louisville, KY 40292.** Applications will be accepted up to 1 November 1987 or until a suitable candidate is identified. *The University of Louisville is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR IN BIOCHEMISTRY. Candidates with at least 2 years of postdoctoral research experience in protein synthesis, enzymology and protein structure, or membrane biochemistry are preferred. Applicants will be expected to conduct an active research program, obtain extramural funding, and participate in teaching medical and graduate students. Send curriculum vitae, outlines of research projections to: **Professor I. Danishefsky, Chairman, Biochemistry Department, New York Medical College, Valhalla, NY 10595.**

Equal Opportunity/Affirmative Action Employer

ASSISTANT SCIENTIST—for multidisciplinary drug delivery research program. The research emphasis of this program is on the innovative applications of biochemical and chemical principles to improve the transport of drugs through biological membranes, and to direct drugs to specific cellular and subcellular sites. Initial emphasis is being placed on delivery of peptides and proteins. Specific areas of research include: (a) the development of cell culture systems as models for the epithelial and endothelial cellular barriers; (b) use of these cell culture systems to study the transport and metabolism of drugs; and (c) development of carrier-based systems for enhancing membrane flux and for targeting of drugs to specific cellular sites. Applicants must have a Ph.D. degree in biochemistry or related discipline, 1 to 3 years of postdoctoral experience, and proven expertise in culturing endothelial and epithelial cells. Send curriculum vitae with names and addresses of three references to: **Dr. Ronald T. Borchardt, Department of Pharmaceutical Chemistry, The University of Kansas, Lawrence, KS 66045.** Deadline for applications: 15 September 1987. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

The Cancer Research Program at the City of Hope National Medical Center is seeking a recent Ph.D. with an interest in the study of human solid tumors for a tenure-track position at the level of **ASSISTANT RESEARCH SCIENTIST**. Preference will be given to people with research interests and experience in gene plasticity, structure, or expression. The City of Hope offers a competitive salary (commensurate with qualifications) and an excellent fringe benefit package. The Cancer Program offers access to excellent and modern facilities for DNA synthesis, protein sequencing, molecular modeling, and molecular cloning. Collaborative research is encouraged. Send curriculum vitae, and a brief summary of research objectives to: **Dr. Steven S. Smith, Division of Surgery, City of Hope National Medical Center, 1500 East Duarte Road, Duarte, CA 91010. Affirmative Action/Equal Opportunity Employer.**

Neuroscience faculty position available at the **ASSISTANT PROFESSOR** level for an investigator in the field of developmental neurobiology, neuroimmunology or neurovirology. Two years of postdoctoral experience and expertise relevant for the study of molecular mechanisms of neuro-psychiatric disorders required. A generous start-up package will be provided. The successful candidate will be expected to develop a strong independent area of research within the expanding neuroscience program. Send curriculum vitae, a brief description of projected research activities, and names of at least three references to: **Neuroscience Program, Maryland Psychiatric Research Center, P.O. Box 21247, Baltimore, MD 21228.**

ASSISTANT PROFESSOR OF PHYSIOLOGY

This full-time faculty position is available immediately. Candidates must have a Ph.D., M.D., D.V.M. or equivalent with recent postdoctoral experience. Position involves teaching and research. Candidates are expected to develop an independent research program with outside funding. Teaching duties include participation in the first-year medical physiology course and courses in a newly developing Ph.D. program. Preference will be given to candidates with experience and interest in cardiovascular, muscle, cellular, or neuro-physiology. Screening of applicants will begin 24 August 1987 and continue until the position is filled. Send curriculum vitae and names of three references to: **Dr. Brian K. Lewis, Chairman, Department of Physiology, Ponce School of Medicine, P.O. Box 7004, Ponce, PR 00732.**

ASSISTANT SPECIALIST to conduct research on mechanisms, kinetics, and dynamics of photoinduced carbenes by nanosecond flash laser photolysis and chemically induced dynamic nuclear polarization (CIDNP) technique. Knowledge and experience in the study of isotope effects, in particular on singlet-triplet intersystem crossing of carbenes required. Demonstrable expertise in isolation, identification, and synthesis of isotope-labeled diazo, diazine and organic heterocyclic compounds. Require Ph.D. in organic chemistry. Forty hours per week; \$25,560 per year. Qualified applicants reply immediately with résumé to: **Dr. J. P. Klinman, Department of Chemistry, 239 Hilderbrand Hall, University of California, Berkeley, CA 94720. Equal Opportunity Employer.**

ASSISTANT PROFESSOR/ASSOCIATE PROFESSOR—in the Department of Human Oncology at the University of Wisconsin. A highly qualified cancer/biochemical pharmacologist Ph.D. is sought for a tenure-track position. This individual should have training in the molecular and/or biochemical mechanisms of drug action (pharmacology). Areas of interest for the position include growth factors, oncogenes, and clinical mechanisms of drug action, but other areas of expertise will be considered. Training in molecular biology would be an advantage. Applicants should have the ability to develop a strong, independent research program. The successful applicant for this position will be expected to participate in the departmental teaching and Ph.D. training programs. Send résumé, a statement of research interest, and the names of three references to: **V. Craig Jordan, Ph.D., D.Sc., Chairman, Pharmacology Search Committee, Department of Human Oncology, University of Wisconsin Clinical Cancer Center, 600 Highland Avenue, Madison, WI 53792. The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.**

Regulatory Toxicologist

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The Center for Chemical Hazard Assessment at Syracuse Research Corporation has an exciting career move opportunity available to you. The skills and experience you possess in the regulatory toxicology field are needed within our independent multi-disciplinary research and development organization. We offer unlimited challenge and opportunity to the right individual at our modern facilities in beautiful Central New York.

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SENIOR IMMUNOLOGIST GASTROINTESTINAL DISEASES

G.D. Searle's Gastrointestinal Diseases Department recognizes the importance of productive research as key to maintaining a position of leadership in the discovery of innovative GI drugs. Currently, we have an excellent opportunity for an Immunologist with a high level of expertise to lead the discovery activities of our Inflammatory Bowel Disease Group.

The scientist we seek will direct multidisciplinary scientists and research assistants in developing appropriate studies and procedures for evaluating compounds of potential value for treating Inflammatory Bowel Disease. This individual will be responsible for translating research into verbal and written reports, attending scientific conferences and submitting papers for publication.

A Ph.D. in immunology/pharmacology, a minimum of 3 years academic or industrial experience and supervisory experience is required. A research background in arachidonate cascade is preferred along with 2-3 years post-doctoral work.

This position offers an attractive salary and excellent benefits package. Searle is located in a northern suburb adjacent to Chicago. Our location offers access to a variety of cultural and recreational facilities, several fine universities and an active science community. Qualified candidates may respond in strict confidence to: **G.D. Searle & Co., R & D Professional Staffing, Dept. DWI, 4901 Searle Parkway, Skokie, IL 60077. An Equal Opportunity Employer.**

SEARLE

POSITIONS OPEN

BIOCHEMISTRY—TWO TENURE-TRACK POSITIONS. The University of Delaware has two tenure-track positions open in biochemistry. There are now seven faculty members in the biochemistry division. The new positions, one junior and one senior, will build on and diversify our present strengths in protein structure and function. Background and interest in applying recombinant DNA technology to fundamental problems is desirable for at least one position. The successful candidates will be expected to teach an advanced course in their area of expertise and participate in teaching general biochemistry. Send curriculum vitae, description of research plans, and arrange to have three letters of recommendation sent by 1 October 1987 to: **Professor H. B. White, Department of Chemistry and Biochemistry, University of Delaware, Newark, DE 19716.** *The University of Delaware is an Equal Opportunity Employer.*

CLINICAL MOLECULAR BIOLOGIST

The Department of Pathology, Rhode Island Hospital, seeks a Director of Clinical Molecular Biology. The successful candidate must have demonstrated scholarly interests to qualify for a faculty appointment at Brown University, at the rank of assistant to associate professor of pathology. The candidate will be expected to develop and administer a laboratory that will provide diagnostic services based upon the techniques of molecular biology, as exemplified by gene expression in mammalian cells or microorganisms; develop a research program; and participate in medical student and resident teaching. Candidates with funded research will be given preference.

Minimal requirements: M.D., experienced in molecular biology, with specialty certification by the American Board of Pathology, or Ph.D. with extensive training in molecular biology.

Deadline for receipt of applications: 30 October 1987. Send curriculum vitae and names of three references to: **Tito Cavallo, M.D., Chairman, Search Committee, Department of Pathology, Rhode Island Hospital, 593 Eddy Street, Providence, RI 02902.**

Equal Employment Opportunity/Affirmative Action Employer.

DEAN COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

The University of Connecticut invites applications and nominations for the position of Dean of the College of Agriculture and Natural Resources.

The University of Connecticut is a land-grant and research university with its main campus located in rural eastern Connecticut. It has an enrollment of 15,000 undergraduate and 5,000 graduate students.

The College is composed of the Departments of Agricultural Economics and Rural Sociology, Agricultural Engineering, Agricultural Publications, Animal Science, Nutritional Sciences, Pathobiology, Plant Science, and Renewable Natural Resources. Enrollment currently is 500 undergraduate students and 140 graduate students. A \$16.3 million budget supports a teaching, research and Cooperative Extension professional staff in excess of 200 positions.

The Dean reports directly to the Vice President for Academic Affairs, and has overall responsibility for personnel, programs, and budgets for the College, including the Storrs Agricultural Experiment Station, the Cooperative Extension Service, and the two-year Ratcliffe Hicks School of Agriculture.

Qualifications for the position include an earned doctorate and a minimum of 10 years of demonstrated ability in one of the recognized disciplines of the College. The successful candidate must also possess significant administrative experience and familiarity with the latest national and international trends in agriculture and natural resources and with the Land-Grant philosophy.

Applicants should submit a personal statement, a complete professional biography, and the names, addresses, and telephone numbers of at least three references to: **Dean, College of Agriculture and Natural Resources, Search Committee, Office of the Vice President for Academic Affairs, Gully Hall, Box U-86, University of Connecticut, Storrs, CT 06268.** Telephone: 203-486-4039. Review of applications will begin 1 November 1987. *The University is an Equal Opportunity Employer and encourages applications from minorities and women.* (Search #8A12).

POSITIONS OPEN

CELL BIOLOGIST

AGRION/Diamond Scientific, a biotechnically oriented vaccine company, is seeking a cell biologist (Ph.D.) with experience in mammalian virology and cell culture. Responsibilities will include developing defined cell culture media for growing mammalian cells more efficiently, more rapidly, and to higher densities, and adaptation of mammalian cells to new 'bioreactors'. This position requires a person who can manage a research team independently and can interact fruitfully with the company's production unit; it has substantial opportunity for personal and professional growth. Respond in confidence by sending your résumé to: **Dr. J. Jensen, R&D, Diamond Scientific, P.O. Box 328, Des Moines, IA 50302.** *Equal Employment Opportunity.*

CELL AND MOLECULAR BIOLOGISTS

The departments of physiology, pharmacology, and medicine at the University of California, San Francisco are seeking candidates for three assistant or associate professor positions in the newly established Lung Biology Center. Successful candidates must have a Ph.D. and/or M.D. degree, and a demonstrated ability to conduct independent research in an area of cell or molecular biology potentially relevant to lung injury or repair. Potential areas of interest include mechanisms of cell secretion, cell growth and differentiation, inflammation, and the extracellular matrix. Primary focus with lung cells is not a prerequisite. Send curriculum vitae and the names of three references to: **Dean Sheppard, Director, Lung Biology Center, Room 5K1, San Francisco General Hospital, 1001 Potrero Avenue, San Francisco, CA 94110.** *The University of California, San Francisco is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

CHAIRPERSON— MICROBIOLOGY/IMMUNOLOGY

The Loma Linda University, School of Medicine, invites applications and nominations for the position of Chairperson of the Department of Microbiology and Immunology.

A candidate should have either an M.D. or Ph.D. degree or both and have demonstrated leadership and productivity in teaching and research. Experience in academic administration is desirable. Loma Linda University is a private institution where education is conducted within a Christian environment. *The University is a religiously qualified, Equal Opportunity Employer.*

Nominations and applications should be sent to: **B. Lyn Behrens, Dean of School of Medicine, Loma Linda University, Loma Linda, CA 92350.** Applications should include curriculum vitae and the names of three references. Closing date for applications is 30 November 1987.

Applications and nominations are invited for the position of **DIRECTOR** of the Ralph L. Smith Mental Retardation Research Center located at the University of Kansas Medical Center, Kansas City. The Director is responsible for stimulating and supporting this Research Center's multidisciplinary program of research in mental retardation and related aspects of human development, which is carried out as part of a three-site University of Kansas Mental Retardation Research Center. The Director is expected to provide leadership to a group of researchers and their students and associates working in 35 laboratories, by helping in the planning of research programs, seeking support for these programs, and cooperating with the other components of the three-site Center. Qualifications include: M.D. or Ph.D. with experience in biomedical research, research administration, and leadership involving groups of researchers, with focus on problems related to mental retardation or other human developmental deficiencies. Prefer principal investigator on federally funded research grant. Tenure-track faculty appointment will be offered in an appropriate academic department. Salary is competitive and commensurate with responsibilities, abilities, and experience. Send nominations or applications with curriculum vitae and names of three to five references before 1 October 1987, to: **A. L. Chapman, Ph.D., Dean of Graduate Studies and Research, University of Kansas Medical Center, 39th and Rainbow Boulevard, Kansas City, KS 66103.** *The University of Kansas is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

CHAIRPERSON, DEPARTMENT OF PHARMACOLOGY/TOXICOLOGY AND DIRECTOR BIOMEDICAL RESEARCH CENTER

Applications or nominations are invited for appointment as Chairperson, Department of Pharmacology/Toxicology, School of Pharmacy, and Director, Center for Biomedical Research, University of Kansas. Candidates should have outstanding records of research accomplishments at the cellular/molecular level in pharmacology/toxicology or related discipline. Each application should be accompanied by curriculum vitae, letter of application and the names of three references. Inquiries, applications, and nominations should be addressed to: **Dr. M. L. Michaelis, Department of Pharmacology/Toxicology, University of Kansas, Lawrence, KS 66045.** Initial deadline for application is 16 October 1987. *The University of Kansas is an Equal Opportunity/Affirmative Action Employer.*

DEAN COLLEGE OF LETTERS AND SCIENCE MONTANA STATE UNIVERSITY

Nominations and applications are invited for the position of Dean of the College of Letters and Science at Montana State University, a multifaceted land-grant institution of 10,000 students. The College, composed of 300 faculty and over 1,800 undergraduate and graduate majors, seeks a candidate with the following qualifications: a terminal degree in a discipline represented in the College; an established reputation for research and creativity; experience in university teaching, preferably at both the undergraduate and graduate levels; knowledge of and appreciation for the teaching methods, scholarship, and educational goals in the departments of Letters and Science; experience in budgetary matters and personnel management; and demonstrable leadership and administrative capabilities.

Starting date is 1 July 1988, and salary is negotiable. Interested individuals should send a formal letter of application addressing interest and qualifications, a résumé, and names, addresses and phone numbers of three references by 1 December 1987, to: **Office of Vice President for Academic Affairs, Search Committee: Dean of Letters and Science, 211 Montana Hall, Montana State University, Bozeman, MT 59717.**

An Equal Opportunity/Affirmative Action Employer.

DIRECTOR FELS RESEARCH INSTITUTE OF CANCER AND MOLECULAR BIOLOGY

Temple University School of Medicine invites applications and nominations for a scientific and administrative leader of the Fels Research Institute of Cancer and Molecular Biology. The Director will hold a tenured faculty appointment in the School of Medicine. The Fels Research Institute is currently a Laboratory/Basic Cancer Center of the National Cancer Institute. Temple Medical School also houses the Editorial Office for *Cancer Research*. The Fels Research Institute will be the focus for a University-wide expansion of research related to cancer and molecular biology. The Director is expected to provide leadership in molecular biological approaches to cancer research, and to foster expansion of molecular biological research at Temple University. A number of positions in addition to the Director are available for rapid expansion of the research program.

Temple University Health Sciences Center includes a new hospital with clinical research laboratories and a modern Clinical Research Center. These facilities provide opportunities for collaborations in clinical aspects of research in cancer, molecular biology, and genetics. Applicants should have a recognized program in an area of molecular biology. A relationship to cancer is desired, however, other areas will be considered. Applications or letters of nomination should be accompanied by curriculum vitae, and the names of at least three references. Send the application before 30 September 1987, to: **Gerhard Plaut, Ph.D., Chairman, Search Committee, Fels Research Institute of Cancer and Molecular Biology, Office of the Dean, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, PA 19140.** *Temple University is an Affirmative Action/Equal Opportunity Employer.*

Visiting Scientist In Immunopharmacology

A postdoctoral Visiting Scientist position is available within the Medical Products Department at Du Pont's Experimental Station in Wilmington, Delaware. The successful candidate will conduct basic research on the biochemistry of the phospholipases C and A2 involved in cellular activation processes. Candidates should have a strong background in biochemistry with interests in cell biology and inflammation research. The appointment will be for one year, renewable for a second year upon mutual agreement.

At the world renowned Du Pont Company, you'll find a highly stimulating multidisciplinary research environment in addition to an excellent salary. To be considered, please send your resume, bibliography, and references to: Dr. Stephen T. Toy, Employee Relations Department, Room X50890, Du Pont Company, Wilmington, DE 19898.



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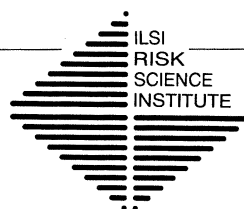
NIEHS

Biometry and Risk Assessment Program

The ILSI Risk Science Institute has established a sabbatical scientist program within the Biometry and Risk Assessment Program (BRAP) of NIEHS. A one- to two-year position is available beginning in the fall of 1987 in Dr. Marshall Anderson's Laboratory of Molecular Toxicology. Qualified applicants are encouraged to submit a detailed curriculum vitae and a brief description of proposed research activities aimed at applying data on oncogene activation and function to the analysis of long-term carcinogenicity studies and to carcinogen risk assessment. Please address applications to:

Dr. Michael Hogan
Biometry and Risk Assessment Program
NIEHS
P.O. Box 12233
Research Triangle Park, NC 27709

The deadline for application is October 1, 1987.



The ILSI Risk Science Institute is a non-profit research foundation that supports research to improve risk assessment.

Executive Director

The Health Effects Institute is an independent, non-profit corporation with a mission to conduct, and to support the conduct of, and to evaluate, relevant research with respect to the health effects of automotive emissions. The Institute was organized in 1980, and is jointly and equally funded by the U.S. Environmental Protection Agency, and 28 American, European, Japanese and Korean manufacturers and marketers of automobiles, buses, trucks and engines in the United States. HEI works with the engineering, scientific, industrial and public policy communities to develop a scientific basis upon which all parties can depend as the basis for regulatory policy. It has a current budget of \$6.5 Million per annum, and works closely with 35 principal investigators and over 100 consultants at research institutions in the United States, Canada, the United Kingdom, the Federal Republic of Germany and Sweden.

The Institute is seeking a new Executive Director, its Chief Operating Officer. The Executive Director reports to a four member Board of Directors that is currently chaired by the former Solicitor General of the United States, Archibald Cox. The Executive Director runs the Institute, and organizes the activities of a scientific and administrative staff and the research and review committees of the Institute. The Executive Director works closely with the sponsors, the Congress, and other relevant organizations to ensure that the Institute has all necessary information to carry out its mission, and serves as the public spokesperson for the Institute.

Qualifications include substantial experience and a distinctive competence in one or preferably more of the areas within which the Institute operates, and a high degree of interest in the relationship of science to social policy. Experience in environmental or health policy is desirable. The Executive Director must have good interpersonal skills, and be able to work effectively with both technical and policy-oriented individuals at all levels of organizations. An aptitude for finance and management is necessary, but no specific training is required.

The Institute offers an attractive compensation package that is commensurate with the nature of this unique public-private partnership. Resumes and a one page letter of qualifications should be submitted by **September 11, 1987** to **Mr. Thomas P. Grumbly, Health Effects Institute, 215 First St., Cambridge, Massachusetts 02142**. HEI is an affirmative action, equal opportunity employer.



Health Effects Institute

[DIRECTOR OF MATHEMATICAL AND INFORMATION SCIENCES]

(#86-452)

The Air Force Office of Scientific Research, Air Force Systems Command, located at Bolling Air Force Base in Washington DC, invites applications from individuals with background in Government, university and industrial mathematical or information sciences research. An earned Bachelor's degree with 24 semester hours of math is required. An earned Master's degree is desirable, and a PhD (or equivalent) in the mathematical sciences is highly desired. The Director is responsible for the management of the Air Force Basic research program in mathematical and information sciences under contract to universities and in Air Force Laboratories. A strong background and publication record in one or more of the mathematical or information sciences fields of control theory in information science, computational mathematics, applied analysis, probability and statistics, optimization, and discrete mathematics is required. Experience should include technical, program supervision, planning and budgeting. The position is Senior Executive Service (General) with a salary range of \$64,700 to \$73,400. No prior Government service is required. Send Standard Form 171, "Application for Federal Employment", as well as narrative statements addressing: (1) technical qualifications; and (2) managerial qualifications, including a list of publications to:

**Civilian Personnel Office
1776 MSSQ/DPCA-86-
ATTN: Mrs. Davis
Andrews AFB, MD 20331-5964**

*Include Announcement # 86-452 on your application.
Application must be received by 30 Sept 1987.*

AN EQUAL OPPORTUNITY EMPLOYER

ENTERAL NUTRITIONAL PRODUCT DEVELOPMENT

The Product Research & Development Department of Ross Laboratories, a Division of Abbott Laboratories, has an opening for a Project Leader.

The individual will be responsible for identifying the formulations, manufacturing procedures, and shelf stability characteristics of Enteral Medical Nutritional Products. Incumbent will be assigned projects with a high degree of technical difficulty, be expected to secure the cooperation of outside vendors, be accountable for the successful completion of project work as an independent contributor, and clearly communicate with technical and non-technical disciplines. Candidates should have an advanced degree in Biochemistry, Pharmacy, or a related science.

If you have experience in developing enteral nutritional or pharmaceutical products and have conducted/coordinated product development work and shelf stability studies in accordance with FDA standards for IND/NDA filings, please forward your resume to: **Management Recruiter, Dept. 316.**



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ROSS LABORATORIES

IMMUNOLOGY RESEARCH SUPERVISOR

The Diagnostic Systems R&D Division of our Medical Products Department has an important opportunity for an Immunologist to join our new technology research program in Billerica, MA, a suburb of Boston.

The successful candidate will supervise the research group responsible for R&D efforts on human tumor antigens, will interact widely with collaborators both within and outside the company, and will play a leadership role in tumor immunology programs within the company.

Your qualifications should include a PhD in Immunology or Immunochemistry plus a minimum of 5 years of related industrial or academic experience. Experience must include hybridoma technology, immunochemistry and immunoassay development. Knowledge of flow cytometry and molecular biology is desirable.

For confidential consideration, please send resume with references to Leslie Greenfield, The DuPont Company, 331 Treble Cove Road, North Billerica, MA 01862. An Equal Opportunity Employer.



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RESEARCH SCIENTIST

Molecular Genetics, Inc., a leading bio-technology firm, has an opening for a qualified Ph.D. to join our animal growth and performance group.

We seek a research scientist with a strong background in endocrinology, animal science, muscle/adipose tissue growth or in a related discipline. Candidates must have research experience with *in vitro* systems studying hormones regulating animal growth, and will have experience with tissue culture, a broad variety of biochemical techniques and RIA and radioreceptor development. Preference will be given to candidates with 2-3 years' postdoctoral experience in any of these areas.

Molecular Genetics offers competitive salaries, excellent benefits and a stimulating multidisciplinary research environment.

Applications for this position will be accepted up to 10/15/87. To apply for this position, send curriculum vitae and a list of three references to:



**Molecular
Genetics Inc.** 10320 Bren Road East
Minnetonka, MN 55343
Att: Manager,
Human Resources

Equal Opportunity/Affirmative Action Employer

STRATAGENE

■ Research Program Director

Stratagene is looking for individuals who can assume the role of research program director. Qualified applicants must have an ongoing research program and have demonstrated the ability to obtain research support in the form of grants or contracts in the areas of genetic disease, genome mapping, mammalian cell biology, or mammalian gene expression, the latter preferably with relevance to expression in transgenic animals. Corporate matching funds are available to supplement research programs supported by grants. In addition, technical support and reagents will be available from Stratagene's molecular biology research products division. Stratagene offers an extremely attractive compensation package to qualified individuals, including a substantial stock option plan.

Stratagene's financial success has allowed it to relocate its research facility to the heart of La Jolla's research community. The Salk Institute, Scripps Clinic, and the University of California, San Diego are among the numerous academic and commercial research centers within one mile of the new Stratagene location. The new site is adjacent to the Torrey Pines State Reserve, offering miles of coastal hiking and jogging trails leading to the Pacific Ocean.



Inquiries will be accepted
in strict confidence by:

Candra A. Carter
Administrative Coordinator
Stratagene
11099 North Torrey Pines Road
La Jolla, CA 92037

BIOLOGICAL MACROMOLECULAR SPECTROSCOPIST SENIOR LEVEL

Merck Sharp & Dohme Research Laboratories, worldwide leader in the development of pharmaceutical and biological products, has an immediate opening for a Senior level Biological Macromolecular Spectroscopist in the Biophysics department.

Candidates for this position should have a Ph.D. in one of the physical sciences or the equivalent and a minimum of two years of relevant post-doctoral or equivalent work experience.

The position entails the application of NMR techniques to the study of the solution structures of proteins, large peptides and other biologically important macromolecules. The proven ability to use NMR techniques to solve problems related to macromolecule structure and macromolecule/ligand interactions at the atomic level is necessary. The successful candidate must be an expert in modern pulse techniques including indirect detection methods and/or computer analysis routines. Knowledge of the experimental literature of protein biochemistry and recombinant DNA technology is highly desirable. The position requires the ability to integrate NMR results with other experimental techniques such as X-ray diffraction, as well as theoretical energy calculations. Applicants should possess good communication skills.

Salary and benefits are excellent as well as growth potential. We are located in a campus-like setting only 25 miles from New York City. If interested, please send resume with salary requirements to: **Theresa Marinelli, R80M-TL1, Merck & Co., Inc., P.O. Box 2000, Rahway, NJ 07065.** An equal opportunity employer, M/F.



Merck & Co., Inc.

Visiting Scholar Program

The Risk Science Research Center (RSRC) has visiting scholar positions available for the academic year 1988-89. Visiting scholars will perform research related to improving the risk assessment process using newly renovated laboratory facilities at the National Center for Toxicological Research (NCTR) in Jefferson, Arkansas. In addition, visiting scholars will hold a joint appointment at the University of Arkansas.

Areas of greatest interest to RSRC include assessing the validity of cross-species and low-dose extrapolation in carcinogen risk assessment; refining exposure assessment methods for humans through the development of quantitative indicators of exposure to toxic chemicals in laboratory animals and humans; refining dose-response measures by including target tissue dosimetry; developing a better understanding of the molecular basis by which factors such as caloric restriction and other dietary factors modulate the toxicity associated with chemical compounds; and integrating animal evidence with human data on several tumorigenic, reproductive, and developmental endpoints.

Interested applicants should submit detailed curriculum vitae and a brief description (5-6 pages) of a proposed research topic. The length of sabbatical stay can range from six months to two years, depending on the time frame necessary for the proposed research. Address all inquiries to:

Ms. Joyce Wroten, Director
Risk Science Research Center
University of Arkansas
P.O. Box 3017
Little Rock, AR 72203

Deadline for application is October 15, 1987.



The Risk Science Research Center is a collaborative program of the ILSI Risk Science Institute, the National Center for Toxicological Research and the University of Arkansas.

NATIONAL CANCER INSTITUTE National Institutes of Health, Public Health Service CANCER PREVENTION FELLOWSHIP PROGRAM, CPFP

The DIVISION OF CANCER PREVENTION AND CONTROL is accepting applications for CPFP. The primary purpose of this program is to attract individuals from a multiplicity of health science disciplines into the field of cancer prevention and control research. The program provides for: participation in DCPC Cancer Control Academic Program (a formal four-month course in cancer prevention and control); 20 months at NCI working directly with individual preceptors on ongoing cancer prevention and control projects and the NCI Year 2000 Goals; one year at a DCPC-approved cancer control program or State Health Department (may be optional). Funding permitting, up to 10 Fellows will be accepted for up to three years of training, beginning on August 28, 1988.

APPLICANTS MUST (BY THE DEADLINE): (1) Possess an M.D. or D.O. degree from an accredited medical school in the U.S., Puerto Rico, or Canada. (Foreign medical graduates—American citizens or Resident Aliens who have received their medical degree from a medical school outside the U.S., Puerto Rico and Canada and that is listed in the World Health Organization's *World Directory of Medical Schools*—must be certified by the Educational Commission for Foreign Medical Graduates [ECFMG]. Current certification, ECFMG or Foreign Medical Graduate Examination in the Medical Sciences [FMGEMS], is required for all foreign medical graduates.) Must have satisfactorily completed an internship (PGI) approved by the Council on Medical Education. (However, application will be accepted when internship is an integral part of medical school curriculum or incorporated as part of residency training.) —OR— Possess other accredited U.S., Puerto Rican, or Canadian doctoral degree (Ph.D., Dr. P.H., D.D.S., etc.) in a discipline related to cancer prevention and control research; biomedical, medical, nutritional, public health or behavioral sciences. (Foreign doctoral graduates must provide documented evidence that the foreign education is comparable to doctoral education received in accredited institutions noted above.); (2) Possess U.S. citizenship or be a resident alien eligible for citizenship within four years; (3) Complete and return the application packet by the deadline (including arranging for official academic transcripts and four, current, original letters of reference to be sent directly by the academic institutions and referees to the CPFP Coordinator).

For questions concerning the program's scientific or administrative aspects, please call Dr. David Poskanzer or Ms. Nancy Garner, respectively. Application packets may be obtained by sending a **POSTCARD** with your name and home address to **CPFP Coordinator, NIH/NCI/DCPC/CCAB, Blair Building, Room 4A05, 9000 Rockville Pike, Bethesda, MD 20892-4200**, or call (301) 427-8788. Please do not send any material until after you have read the instructions in the application packet.

DEADLINE FOR RECEIPT OF APPLICATIONS: JANUARY 15, 1988
(The NIH is an Equal Opportunity Employer)

POSITIONS OPEN

DIRECTOR OF ENVIRONMENTAL HEALTH AND SAFETY

University of Colorado Health Sciences Center is seeking applicants for a senior level administrative position responsible for the management and coordination of all environmental health and safety activities of the Center.

Requirements: Bachelor's degree from an accredited college or university in chemistry, biology, or directly related field and 6 years of professional experience in the field of hazardous chemicals, radioactive material, or infectious material, including 2 years of management and administrative experience. An advanced degree in chemistry, biology, or related field may be considered as a substitute for some of the work experience. Salary \$45,000 to \$55,000 per year. Apply to: **Employment Office, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, CO 80262.** Applications deadline: 15 October 1987. *Affirmative Action/Equal Opportunity Employer.*

DIRECTOR, MASSEY CANCER CENTER, MEDICAL COLLEGE OF VIRGINIA, VIRGINIA COMMONWEALTH UNIVERSITY (MCV/VCU). We are searching for a nationally recognized leader in cancer research/patient services/education to further develop, facilitate and coordinate all programs in research, patient services, education, and community services related to oncology in this NCI designated Cancer Center. Candidates should have an M.D. or Ph.D. degree, qualify for professor level in their respective discipline and have administrative experience and abilities. *MCV/VCU is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.* Send curriculum vitae to: **Harold M. Maurer, M.D., Chairman, Search Committee, Medical College of Virginia, VCU, Box 646, Richmond, VA 23298.** Deadline for receipt of applications is 1 December 1987.

DIRECTOR OF STEWARDSHIP LAND MANAGEMENT

The Nature Conservancy invites applications for the position of Director of Stewardship. Develop and implement policies and procedures to administer the Conservancy's land management programs; develop annual and long-range budgets and fundraise for stewardship programs; supervise stewardship staff. Requirements include graduate degree in biological sciences, three or more years of successful work experience in one or more of the following: resource management, business, fundraising; broad knowledge of ecosystem types and associated management practices and issues; good writing and public speaking skills; ability to work well with a wide variety of people; willing to travel frequently and on short notice; committed to preserving natural diversity. Submit résumé and cover letter to: **Search Committee (Confidential), c/o John Flicker, Executive Vice President, The Nature Conservancy, 1800 North Kent Street, Suite 800, Arlington, VA 22209.**

The Nature Conservancy is an Equal Opportunity Employer.

FACULTY OPENING IN TUMOR IMMUNOLOGY GYNECOLOGIC ONCOLOGY

The Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, UCLA School of Medicine, is actively recruiting basic science faculty in the area of tumor immunology and immunotherapy. The research is in biologic response modifiers for the treatment of gynecologic neoplasms, and the assessment of immunologic function in gynecologic oncology patients.

Qualifications include a Ph.D. who is interested in pursuing this area of immunology and who has an interest in cytokines, the mechanism of lymphoreticular cell activation, and their application to clinical medicine. Our particular interest is in a scientist who has recently completed a postdoctoral fellowship.

Send résumé to:

Jonathan S. Berek, M.D.
Director
Division of Gynecologic Oncology
Department of Obstetrics and Gynecology
UCLA School of Medicine
Room 24-127, CHS
Los Angeles, CA 90024-1740

Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

ECOLOGIST/SOIL CHEMIST to join an interdisciplinary team researching links between soil processes and productivity of Pacific Northwest forest ecosystems. Ph.D. in ecology or soils with emphasis on nutrient cycling. Experience in both field and lab, including use of autoanalyzer. Full-time, 12-month faculty position. Salary \$22,000 to \$24,000, depending on qualifications. Call: **Dr. Dave Perry, 503-754-2244, or Dr. Fred Swanson, 503-757-4398.** Send letter of application, complete résumé and transcripts, and three letters of reference by 1 October 1987 to: **Dr. Logan Norris, Head, Department of Forest Science, College of Forestry, Oregon State University, Corvallis, OR 97331.** *An Equal Employment Opportunity/Affirmative Action Employer. Complies Rehabilitation Act Section 504.*

ENVIRONMENTAL CHEMIST. The Illinois State Water Survey (ISWS), Atmospheric Chemistry Section, at the University of Illinois, seeks applicants for research on airborne toxic metals and organics, and their deposition. Position is funded for 2 years, with possibility of extension. M.S. with research experience, or Ph.D. Applicants should have strong preparation in organic chemistry, skills in atmospheric sampling, lab procedures, statistical data analysis (including receptor modeling), and oral and written presentation of results. Good opportunity to develop research program in airborne toxics. Salary: mid-\$20's to low \$30's. Closing date: 11 September 1987. Résumé to: **Dr. Donald Gatz, ISWS, 2204 Griffith Drive, Champaign, IL 61820.** *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

ENVIRONMENTAL CHEMIST. University of Minnesota. The Natural Resources Research Institute of the University of Minnesota is seeking a research associate environmental chemist for an opening within the Center for Water and the Environment. The area of expertise is open but we would especially welcome applications from individuals interested in chemical limnology, chemistry of natural products, or biogeochemistry. This position has responsibility for the administration of the Center's Central Analytical Laboratory. It is expected that the successful candidate will develop a strong externally funded research program and advise the economic development program on matters relating to environmental chemistry. The initial appointment is for 3 years, with renewal dependent upon performance. This is an appointment to the University's professional research staff. Minimum qualifications: Ph.D. in an environmental science with 2 years of laboratory administrative experience. Desired qualifications: Ph.D. in an environmental science, 2 years of laboratory administrative experience, evidence of publication in peer-reviewed journals, and a demonstrated ability to attract external funding. Salary: Open, dependent on experience. Starting date: 1 November 1987. Applications must be postmarked by 15 September 1987. To apply, please send a résumé and the names, addresses and phone numbers of five references to: **Dr. Robert J. Naiman, Director, Center for Water and the Environment, Natural Resources Research Institute, University of Minnesota, Duluth, MN 55811.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

FACULTY POSITION WORCESTER POLYTECHNIC INSTITUTE

The Department of Biology and Biotechnology of Worcester Polytechnic Institute invites applications for a tenure-track faculty position at the assistant or associate professor level beginning between 1 January and 1 September 1988. Candidates must have a Ph.D. and at least 2 years of postdoctoral research experience. The successful candidate will have a demonstrated capacity for an independent research career and a commitment to excellence in both undergraduate and graduate education. Applicants for appointment as associate professor must have an ongoing research program and teaching experience. Preference will be given to candidates with teaching capability in the area of molecular biology and genetics, and whose research complements existing strengths of the department, including gene structure and function, plant physiology and molecular biology, neurophysiology, and bioprocess technology. Applicants should submit curriculum vitae, summary of past and future research, and three letters of recommendation to: **Search Committee, Department of Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA 01609.** Applications will be accepted until 1 October 1987.

POSITIONS OPEN

EUKARYOTIC GENETICIST—A tenure-track position is to be filled at the assistant or associate professor level for September 1988. Duties include teaching an undergraduate course in genetics, one other advanced course per year, and maintaining a vigorous research program including supervision of graduate students. All areas of eukaryotic genetics will be considered including molecular, developmental and evolutionary genetics. Salary commensurate with qualifications and experience. Applicants with postdoctoral experience should send their curriculum vitae and a list of at least three referees to: **Dr. Joseph Kunkel, Chairman, Genetics Search Committee, Zoology Department, University of Massachusetts, Amherst, MA 01003.** Deadline for receipt of application is 30 November 1987. *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION

The University of North Carolina at Chapel Hill invites applications for a junior or senior faculty position in the Department of Anatomy and Laboratories for Cell Biology. Applicants should have demonstrated excellence in any area of cell biology and must have current grant support. Teaching commitment will be in medical histology/cell biology. *Women and minorities are encouraged to voluntarily identify themselves.* Send curriculum vitae, a brief description of research plans, and the names of three references by 15 October 1987 to: **Dr. Charles R. Hackenbrock, Chairman, Department of Anatomy, School of Medicine, 108 Swing Building, 217H, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION BIOCHEMISTRY/MOLECULAR BIOLOGY

The Department of Biochemistry, University of Arkansas for Medical Sciences, invites applications for a tenure-track position at the assistant or associate professor level. Preference will be given to candidates with expertise in the area of the molecular biology and protein engineering of glycosylated and/or membrane proteins who have established an independent research program. However, applications are also encouraged from those who have a Ph.D. with a minimum of 2 years of significant postdoctoral experience using molecular genetics to solve problems of protein structure and function. This is an opportunity for an energetic researcher to join an academic program committed to excellence in research and teaching. Those interested should submit their curriculum vitae, a summary of research accomplishments and future plans, and three letters of recommendation by 1 October 1987 to: **Ernest Peck, Chairman, Biochemistry, University of Arkansas for Medical Sciences, Slot 516, 4301 West Markham, Little Rock, AR 72205.** *UAMS is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS IN MOLECULAR NEUROBIOLOGY

The newly organized Division of Molecular Medicine at New England Medical Center invites applications for faculty positions at the assistant or associate professor level. Applicants require an M.D. and/or Ph.D. degree with a minimum of 2 years of postdoctoral research training. Faculty members are currently investigating the areas of neuropeptide and ion channel gene regulation using techniques of molecular cloning and expression of genes in tissue culture and transgenic animals. Individuals with research interests in receptor molecular biology, signal transduction, membrane transport and molecular genetics would strengthen our current activities, however, we invite applications from other areas as well. Successful candidates will be expected to develop an independent research program and will be protected to devote at least 80% of their time to their research. Start-up support will cover the cost of establishing a new laboratory with equipment and operating funds for an initial 2-year period. Interested candidates should submit their curriculum vitae, names of three references, and a statement of research interests by 15 October 1987 to: **Richard H. Goodman, M.D., Ph.D., Division of Molecular Medicine, Box 057, New England Medical Center Hospital, 750 Washington Street, Boston, MA 02111.** *An Equal Opportunity Employer.*

PROTEIN CHEMIST

Outstanding opportunity to purify and characterize novel human tumor derived growth factors. Experience in high performance purification techniques essential. Salary dependent upon experience. Position available immediately, initial commitment 2 years. Send CV and references to: Dr. Marc Lippman, Medicine Branch, Building 10, Room 12N226, National Cancer Institute, National Institutes of Health, 9000 Rockville Pike, Bethesda, MD 20892.

*NIH
is an
Equal Opportunity Employer*

ADVANCED DRUG DELIVERY RESEARCH CELL BIOLOGIST

Horsham, West Sussex, England

We are seeking a scientist of outstanding ability to lead a research group within the CELL BIOLOGY Research Area. The purpose of this Research Area is to apply current concepts and techniques in cell and molecular biology to the site-specific delivery of drugs. The research group would be part of a multidisciplinary effort investigating the transport and sorting of macromolecules and particles within and through specific cells. Applications are invited from those with a strong research record and postdoctoral experience in the cellular and subcellular localisation of receptors and ligands. Familiarity with the use of electron microscopy/immunohistology techniques would be an advantage. The appointee would be expected to make a significant contribution to the research programme.

We can offer a competitive salary, together with a range of other benefits which you would expect of a major multinational Pharmaceutical Company. Relocation assistance will be given where appropriate.

Applicants should send a full C.V. to Andrew Dobson, Personnel Officer, Ciba-Geigy Pharmaceuticals, Wimblehurst Road, Horsham RH12 4AB, West Sussex, England.

CIBA-GEIGY

EMERY

Uncommon Chemicals®

INDUSTRIAL MICROBIOLOGIST

Emery Chemicals, a major manufacturer of oleochemicals and other specialty chemicals, has an excellent opportunity for a PhD Microbiologist within its Central Research Group. We are seeking a creative, versatile, and goal-oriented individual with knowledge of microbial physiology and lipid metabolism.

The candidate should have a PhD in Microbiology with 3 or more years industrial experience including possible experience with recombinant organisms, microbial laboratory safety and applications with specialty chemicals.

Emery offers competitive salary and benefits package, including a matching 401 (k) plan. To apply for this position, please send a detailed resume including salary history and requirements, as well as references to: *Employee Relations Dept., E-21.*

EMERY CHEMICALS

11501 Northlake Drive
Cincinnati, Ohio 45249

Equal Opportunity Employer

JPL/NASA Visiting Senior Scientist Planetary Atmospheres Research

The Jet Propulsion Laboratory invites application to the Visiting Senior Scientist Program in the area of Planetary Atmospheres Research. The position requires a PhD or equivalent research experience in physics or a related atmospheric science; a record of research publications in the refereed literature; a demonstrated ability to work with other scientists and to synthesize advisory information and strong communication skills. Tenured faculty members familiar with NASA's Solar System Exploration Program with experience in program management are the preferred choice.

Responsibilities include aiding in the planning and implementation of the Planetary Atmospheres Research and Analysis (R&A) Program within the Solar System Exploration Division at NASA Headquarters. Duties include continuing, extensive contacts with the research community, conducting peer reviews of research proposals, recommending selection of investigations as well as assisting in the maintenance of a balanced and productive program within the available budgetary resources. The appointee is expected to work closely with managers at several NASA centers and to advise potential investigators from NASA centers and the university community how their plans relate to the NASA program as well as to assure that R&A activities are supportive of current and planned solar system exploration flight missions.

Frequent travel and residence near NASA Headquarters (in the Washington, D.C. area) will be required. Appointee must be a U.S. citizen or Permanent Resident and is expected to return to his/her home institution following this NASA assignment.

Please send curriculum vitae, bibliography and the names of four references to: **Dr. Harry Ashkenas, Dept. U14, 180-900, Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, CA 91109, (818) 354-8251.** An Equal Opportunity Employer M/F.

"There's only one."

JPL

Jet Propulsion Laboratory
California Institute of Technology

POSITIONS OPEN

FACULTY POSITIONS

The Atherosclerosis Research Unit (ARU) of the Department of Medicine has several tenure-track positions open at both junior and senior faculty levels for M.D., Ph.D., or equivalents. Research areas of interest include: cell and structural biology, lipoprotein structure and function, molecular biology, protein chemistry and structure clinical research. Salary based upon experience. Candidates should send curriculum vitae, names of three references, and a short summary of research interests to: **Jere P. Segrest, M.D., Ph.D., Professor and Director of Atherosclerosis Research Unit, Volker Hall G035, University of Alabama at Birmingham, University Station, Birmingham, AL 35294. An Affirmative Action/Equal Opportunity Employer.**

FACULTY POSITIONS IN PHARMACOLOGY

The Department of Pharmacology of the University of Illinois College of Medicine seeks applications from highly qualified scientists capable of establishing independent research programs and collaborative ties with ongoing research. Appointments will range from assistant professor to full professor, depending on qualifications. Minimal qualifications include a Ph.D. and/or M.D. degree with a strong track record in research. Ongoing research programs are focused on cardiovascular, biochemical toxicology, and neuropharmacology problems. Duties include instruction to medical, dental and graduate students. Send curriculum vitae and the names of four evaluators to: **Pharmacology Search Committee, Department of Pharmacology, University of Illinois College of Medicine, 835 South Wolcott, Chicago, IL 60612. For full consideration, apply by 30 September 1987. The University of Illinois is an Equal Opportunity/Affirmative Action Employer, and encourages applications from women and minorities.**

FACULTY POSITIONS KING ABDULAZIZ UNIVERSITY FACULTY OF METEOROLOGY, ENVIRONMENT AND ARID LAND AGRICULTURE JEDDAH, SAUDI ARABIA

Applications are being accepted by the Faculty of Meteorology, Environment and Arid Land Agriculture, King Abdulaziz University for the following three faculty positions:

1. HORTICULTURAL SCIENTIST
2. FLORICULTURE SCIENTIST
3. ANIMAL BREEDING SCIENTIST

Applicants should hold a Ph.D. in horticulture, floriculture, animal breeding, or a closely related field, and possess a proven record in teaching and research. Candidates should submit curriculum vitae, including a list of publications, statements of research interests and teaching experience, and three letters of reference to:

**Dr. Dwayne A. Suter
Associate Dean
College of Agriculture
Texas A&M University
College Station, TX 77843**

In addition to an attractive salary, King Abdulaziz University offers a generous housing and furniture allowance, end of contract gratuity, 60 days of paid summer leave each year, baggage allowance, educational allowance for school-age children, transportation allowance, and annual round-trip air fares.

Term of employment is for 1 year with opportunity for renewal.

PURDUE UNIVERSITY

HEAD

DEPARTMENT OF BIOLOGICAL SCIENCES

The Department of Biological Sciences, Purdue University, is seeking an established scholar with broad interests to serve as Head of the Department. The Department has about sixty faculty members and extensive teaching, research, and service responsibilities appropriate to a publicly supported university. We are looking for a person with a record of outstanding scientific achievement and commitment to higher education. Applications and nominations, including curriculum vitae, bibliography, and names of three individuals familiar with the candidate's qualifications, should be sent to **Search Committee Convener, Department of Biological Sciences, Purdue University, West Lafayette, IN 47907 by 15 October 1987. Purdue University is an Equal Opportunity/Affirmative Action Employer.**

BIOCHEMIST

Merck Sharp & Dohme Research Laboratories, a worldwide leader in the development of pharmaceutical and biological products, has an immediate opening for a Biochemist in their Molecular Biology Task Force.

Candidates for this position should possess a Ph.D. or equivalent in Biochemistry with research experience in Enzymology. In addition, the applicant must have completed a post-doctoral fellowship in a related area.

Responsibilities include directing and performing isolation and characterization of novel enzymes, growth factors, hormones and peptides using state-of-the-art isolation technologies. The ability to work in a multi-disciplinary environment with molecular biologists, peptide chemists and biologists required.

Salary benefits are excellent, as well as growth potential. We are located in a campus-like setting only 25 miles from New York City. If interested, please send resume with salary requirements to: **Theresa Marinelli, R80M-TL1, Merck & Co., Inc., P.O. Box 2000, Rahway, NJ 07065. An equal opportunity employer, M/F.**



Merck & Co., Inc.

ANALYTICAL CYTOLOGY

A postdoctoral position is available in analytical cytology at the National Flow Cytometry Resource. Candidate should have a multidisciplinary background in either genetics, carcinogenesis, growth regulation, tumor immunology, or related fields plus experience in innovative data analysis techniques. Collaborative projects with outstanding investigators from around the world are extant and can be an integral part of the position. Applicants should have a strong desire to gain experience in cell/molecular biology, an interest in analytical techniques, and an appreciation of flow cytometry technology and its potential.

The NFCR is a national "user" facility jointly sponsored by the Division of Research Resources of NIH and the Department of Energy. Interested candidates should send a resume to **Dr. L. Scott Cram, Director of the National Flow Cytometry Resource, LS-4, MS M888, Los Alamos National Laboratory, Los Alamos, New Mexico 87545.**

TO FORMALLY APPLY, please send a curriculum vitae, employment application, three letters of reference, and graduate and undergraduate transcripts to: **Carol M. Rich, Human Resources Development Division, POSTDOC-AA, Los Alamos National Laboratory, Los Alamos, New Mexico 87545.**

Affirmative Action/Equal Opportunity Employer



MGH

Massachusetts General Hospital, Boston, MA Biomedical Engineering and Wellman Laboratories

A position is available as Assistant Professor, Harvard Medical School at the Wellman Laboratories of Photomedicine and the Dept. of Biomedical Engineering (DBE) at Massachusetts General Hospital. The primary responsibility is to perform engineering research, design, and development leading to biomedical applications of laser, optical, and photobiologic systems. This will include planning, research, device design, development, and testing in collaboration with biomedical research teams. In addition, there will be an obligation for teaching and supervision of engineering students and laboratory engineering technicians.

The person will act to promote and organize interdepartmental research and development in laser photomedicine and optical diagnostics. It is expected that awareness of all research projects and capabilities within each department will be maintained, and an active liaison role will be taken. Primary (60%) activity and research will be within the Wellman Laboratories' environment. An office and complete access to DBE facilities will also be available in the DBE. This person will supervise engineers in development projects that involve significant mechanical engineering, and participate in the DBE.

Applicants must have an earned doctorate in mechanical engineering, electrical engineering, or biomedical engineering. Experience in mechanical design, biocompatibility, fiber optics, optical systems design, electro-optics, and fabrication of prototype optical systems is required.

This is a faculty position, in which departmental funding is expected to lead to independent or collaborative research grant funding, initiated by the investigator. The starting salary for the position will be commensurate with educational background and professional experience.

Send resume to Dr. Roy Anderson, Wellman Laboratories-2, Massachusetts General Hospital, Fruit Street, Boston, MA 02114.

We are an Equal Opportunity/Affirmative Action Employer.

Massachusetts General Hospital

PCRI

The Plant Cell Research Institute, Inc., is a leading plant and agriculture biotechnology research laboratory dedicated to improving plants and their products through the integration of chemistry and biology. PCRI has an immediate opening for:

DIRECTOR OF MOLECULAR BIOLOGY

Responsibilities involve leading an outstanding group of molecular biologists in conducting contract and proprietary research in the improvement and protection of commercially important crops, initiating innovative solutions to agricultural and nutritional problems and working closely with a strong management team to develop a center of excellence in plant biotechnology.

The ideal candidate will have a Ph.D. in molecular biology, plant genetics or biochemistry, 5 to 10 years managerial experience working in the laboratory with and leading innovative research teams, and an interest in solving real and commercially important problems in plant and agricultural biotechnology.

PCRI is located in the San Francisco Bay Area in a modern, superbly-equipped laboratory. Excellent compensation, benefit, relocation and stock option packages are available.

Publications of research results are encouraged and supported. Please forward your resume, including salary history, and three reference to:

**Staff Relations
The Plant Cell Research Institute, Inc.
6560 Trinity Court
Dublin, California 94568**

(PCRI is an equal opportunity employer, M/F/H/V)

ASSOCIATE EDITOR SCIENCE MAGAZINE

Editorial position available for a Ph.D. earth scientist with two or three years research experience and publications in the refereed literature. The successful candidate should be well-versed in both quantitative and qualitative aspects of geophysics, geochemistry, and atmospheric and oceanographic sciences. General interest in physical sciences is expected. Initial duties will include editing manuscripts for clarity and style, with progress to wide responsibilities in manuscript selection. Previous editorial experience not required. This is a full-time position in our Washington, D.C. editorial office.

Please submit résumé with cover letter, including salary requirements, to:

**Carolyn Bell
SCIENCE Magazine
1333 H Street, NW
Washington, D.C. 20005**

We are an Equal Opportunity Employer.

CHALLENGE YOUR SKILLS

Research has been a key factor in making Goodyear the world's leading manufacturer of tires and related products. Our Advanced Tire and Processing Research Division holds exciting opportunities for Polymer Scientists at our Corporate Research Center in Akron, Ohio.

Condensation Polymer Specialist

The successful candidate must have a PhD in Polymer Science with two to five years' experience in the synthesis and characterization of polyarylates and liquid crystalline polymers. Responsibilities will include the development of new fiber reinforcement systems for industrial applications. Background in fiber spinning and fiber characterization is desirable.

Multiphase Polymer Specialist

The qualified applicant must have a PhD in Polymer Science/Engineering with two to five years' experience in the development of multiphase polymer systems. Background in polymer structure/property relationships, characterization and physical testing methods is required. Expertise in polymer synthesis is a plus. Responsibilities will include the development of new reinforcing concepts and materials.

Polymer Materials Scientist

The qualified applicant should have an advanced degree in Polymer Science/Engineering or Materials Science with a strong theoretical background in polymer systems to play a creative role in the development of new high performance fibers for industrial applications. A working knowledge of industrial melt spinning processes and experience in fiber characterization techniques such as DSC, X-ray diffraction, optical and electron microscopy and physical testing methods is required.

These positions with the Fortune 50 industry leader offers excellent benefits, relocation assistance, and highly competitive salary commensurate with your education, experience and professionalism. If you have the qualifications and desire to meet the rewarding challenges which Goodyear can offer, direct your resume to: **L.C. Kwok, Salaried Personnel, THE GOODYEAR TIRE & RUBBER COMPANY, 1144 E. Market Street, Akron, Ohio 44316**. Applicants must be U.S. Citizens or Permanent Residents. Equal Opportunity Employer M/F/H/V.

GOODYEAR

POSITIONS OPEN

FISHERIES/AQUATIC BIOLOGIST. Research associate position available immediately to study effects of hydropower (lake fluctuation, entrainment, tailwater water quality) on fishery resources of the Grand River in the Ozarks. Ph.D. in fisheries, zoology, or related discipline required. Salary: \$25,000. Send letter, résumé, transcripts, and names of three references to: **Dr. A. V. Zale, Oklahoma Cooperative Fish and Wildlife Research Unit, Department of Zoology, Oklahoma State University, Stillwater, OK 74078.** *An Equal Opportunity/Affirmative Action Employer. For full consideration applications must be received by 1 October 1987.*

FISH ECOLOGIST, University of Minnesota. The Natural Resources Research Institute of the University of Minnesota has an opening for a research associate fish ecologist within the Center for Water and the Environment. We are seeking a person with expertise in either juvenile fish-habitat relationships or production ecology. The successful candidate is expected to develop a strong externally funded research program and to advise the economic development program in the area of fisheries. The initial appointment will be for 3 years with possible renewal depending upon performance. This is an appointment to the University's professional research staff. Minimum qualifications: Ph.D. in a biological science and 1 year experience. Desired qualifications: Ph.D. in a biological science, 1 to 3 years of experience, publications in peer-reviewed journals and demonstrated ability to attract external funding. Salary: Open, dependent on experience. Starting date: 1 January 1988. Applications must be postmarked by 15 September 1987. To apply, please send a résumé and the names, addresses, and phone numbers of five references to: **Dr. Robert J. Naiman, Director, Center for Water and the Environment, Natural Resources Research Institute, University of Minnesota, Duluth, MN 55811.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

IMMUNOLOGIST. The Baptist Medical Centers, Division of Research, is seeking a highly motivated individual with a Ph.D. and 2 years of postdoctoral experience for a staff position supporting a broad program in laboratory and clinical immunology. Interests include tissue culture, flow cytometry, monoclonal antibodies, tissue typing and cross matching, tumor classification using antibody staining, and lymphocyte function evaluation. Salary commensurate with experience. Send curriculum vitae, statement of experience and interests, and names of three references by 15 September 1987 to: **The Baptist Medical Centers, Human Resources Department, 3201 4th Avenue South, Birmingham, AL 35222.** *An Equal Opportunity Employer.*

IMMUNOLOGIST POSTDOCTORAL POSITION

A postdoctoral position is available immediately to join a lab investigating the cell biology, biochemistry, and molecular biology of macrophage activation. Applicant should have a recent Ph.D. in immunology/medical microbiology with a strong background in molecular biology. The project will involve study of the regulation of expression of macrophage genes by interferon. Send curriculum vitae, thesis abstract, and names and addresses of three references to: **Dr. Donna Paulnock, Department of Medical Microbiology, University of Wisconsin Medical School, 1300 University Avenue, Madison, WI 53706.** *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

INSECT GENETICIST/RESISTANCE MANAGEMENT. Assistant professor of entomology, 12-month tenure-track. Research in arthropod resistance management. Cooperate with University programs and Biotechnology Institute. Teach population biology/ecology. Ph.D. in entomology, genetics, ecology, or related areas. Application deadline: 1 October 1987, or until a qualified candidate is found. Send curriculum vitae, statement of research goals, transcripts, and names and addresses of five references to: **C. W. Pitts, Head, Department of Entomology, Box 8, 106 Patterson Building, Penn State University, University Park, PA 16802.** *An Equal Opportunity/Affirmative Action Employer.*

CSIRO FISHERIES BIOLOGIST (Research Fellow)

A\$28,629 p.a. to A\$41,861 p.a.

Division of Fisheries Research

Marine Laboratories, Hobart, Tasmania Australia

THE DIVISION: The CSIRO Divisions of Fisheries Research and Oceanography collectively form the CSIRO Marine Laboratories. The Division of Fisheries Research undertakes studies into biology, ecology and population dynamics of marine populations (both plant and animal) and supplies information for the development of management strategies for fisheries within the A.F.Z. The Division currently employs about 140 staff of whom 80 are professional research staff. Laboratories are located in Hobart, Perth and Brisbane. The Division has a well equipped charter vessel (53m) available for research.

THE PROGRAM: Within the Fisheries Resources Section a project has been established to estimate the abundance of orange roughy (*Hoplostethus atlanticus*) in southeast Australian waters. The results of this research project are to be presented to and used by advisory and management agencies for the benefit of the fishery and by industry to reduce the cost of capture and increase the value of the catch.

THE JOB: The appointee will lead a team undertaking research on the abundance, distribution, movements and population dynamics of the orange roughy. In consultation with senior research staff the appointee will be responsible for the formulation, planning, performance and completion of research projects including studies of reproduction, feeding, growth and mortality. Seasonal and spatial abundance will also be examined by the use of acoustic, remote camera and direct capture methods.

THE PERSON: Applicants should hold a Ph.D. degree or equivalent qualification in quantitative Zoology or Fisheries Biology with post graduate experience of population dynamics or stock assessment. Demonstrated seagoing experience in the use of acoustic methods for stock assessment and experience in motivating and leading a team of professionals is essential. Knowledge of and experience with conventional methods of assessment of diet, reproduction and mortality and experience in the use of mid water and demersal fish trawls desirable. Ability to work at sea essential.

CONDITIONS: Appointment will be for a term of 3 years with Australian Government Superannuation benefits available.

MORE INFORMATION: Prospective applicants are invited to telephone Mr. I. St. George on (002) 20 6222 who can provide a copy of the detailed job description and selection criteria.

APPLICATIONS: Applications should be submitted by September 30, 1987 and quote reference number J8654. They should be framed against the selection criteria and should state relevant personal particulars including details of qualifications and experience. Applicants should nominate at least two professional referees, and address their applications to:

The Chief
CSIRO Division of Fisheries Research
Marine Laboratories
G P O Box 1538
HOBART 7001
AUSTRALIA

CSIRO is an Equal Opportunity Employer

POSITIONS AVAILABLE

The International Laboratory for Research on Animal Diseases (ILRAD), is an internationally funded, major institution with the mandate of developing improved methods to control two important diseases of livestock, trypanosomiasis and theileriosis. The multidisciplinary research program includes biochemistry, molecular biology, immunology, cell biology, pathology, parasitology, electron microscopy and entomology with appropriate supporting units. Applications are invited for the following positions.

SC/87/5—Epidemiologist/Pathologist

The position will involve research on the pathogenesis of trypanosomiasis especially as related to reproductive performance of cattle, and leadership of ILRAD's participation in the African Trypanotolerant Livestock Network. The Network is a collaborative program between the International Livestock Center for Africa (ILCA), ILRAD and nine African countries, on the productivity of livestock under different conditions of husbandry and trypanosomiasis risk.

Applicants should have a degree in veterinary medicine and a higher degree in an appropriate area of veterinary research. A minimum of 4 years experience in livestock diseases in the tropics and fluency in French and English are essential. Preference will be given to applicants with experience of field and laboratory research on trypanosomiasis, and in management of internationally supported livestock research projects.

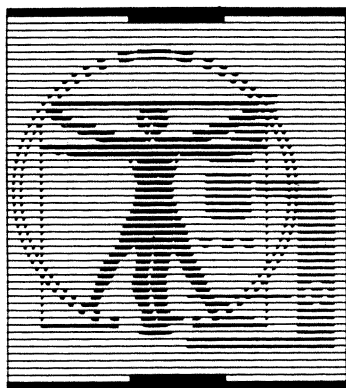
PD/87/6—Molecular Parasitologist

A postdoctoral position is available in a multidisciplinary research group developing and applying improved vaccines against *Theileria parva* infections (East Coast fever) in cattle. The successful candidate will be responsible for characterising, on the basis of DNA heterogeneity, immunologically different strains of *Theileria* known to infect cattle.

Applicants must have a PhD and experience in molecular parasitology. A first degree in veterinary medicine and immunological experience including the preparation and use of monoclonal antibodies are also desirable.

These are International Staff positions and salaries will be paid in US dollars. Initial salary will be determined by qualifications and experience. Scientific staff are expected to contribute to the training program. Moving, housing, commutation and education allowances are paid and there are medical and retirement benefits. Applicants should include current curriculum vitae and names and addresses of three referees. Applications, citing the position reference number, should be sent by September 30th, 1987 to:

The Chief Personnel Officer,
ILRAD,
P.O. Box 30709,
NAIROBI,
KENYA.



SENIOR SCIENTIST

Preclinical Evaluation Laboratory

Program Resources, Inc. (PRI) is at the forefront of biomedical research, paving the way for new programs and new discoveries at the National Cancer Institute — Frederick Cancer Research Facility, Frederick, MD.

We're looking for a uniquely skilled professional with the creative know-how to direct an existing laboratory of 10-15 research technicians and post-doctoral fellows. This laboratory supports the Biological Response Modifiers Program for which we are developing and using animal models to predict BRM anti-tumor activity. We're using this information to optimize protocols for the use of these agents in human clinical trials. Additionally, efforts will be made to evaluate new agents for their BRM activities in animal models.

The scientist we seek should have a PhD or MD degree with proven experience in the areas of immunological testing and animal tumor modeling. Laboratory management experience is also desirable.

PRI will provide the successful candidate an excellent compensation and benefits package, including relocation assistance. For consideration, please send resume and names of three references to: Personnel Manager, PROGRAM RESOURCES, INC., NCI-Frederick Cancer Research Facility, P.O. Box B, Frederick, MD 21701.

An equal opportunity employer, M/F.



PROGRAM
RESOURCES, INC.

Becton Dickinson Immunocytometry Systems develops and markets, on a worldwide basis, sophisticated flow cytometry instrument and reagent systems used for cell analysis. We currently have the following two openings available:

Production Supervisor, Drug Production

In this position, you will supervise and carry out the purification and aseptic filling of therapeutic monoclonal antibodies. This includes working closely with Cell Culture, Animal Facilities and Quality Control Personnel to plan, schedule and control production, from cell culture through animal injection, testing and product release. You will also validate the aseptic fill procedure, depyrogenation oven and other equipment and procedures; maintain the purification, support and clean rooms and equipment according to GMP. To qualify, you must have a BA/BS in biology, chemistry or biochemistry, along with 3-5 years' experience in a pharmaceutical or biotechnology laboratory. Experience must include protein biochemistry, including column chromatography. Supervisory and purification scale-up experience are desirable.

Senior Process Development Engineer

You will be actively involved in all phases of work conducted in the Process Development Lab relating to the production and characterization of therapeutic monoclonal antibodies with specific emphasis in the area of large scale purification. The experiments you design and execute will evaluate preparative and analytical techniques for protein purification and modification. You'll also be responsible for preparing process and documentation, as well as the evaluation of new manufacturing processes.

Master's degree in Biochemistry, Chemistry or Chemical Engineering required; Ph.D. desirable. Must have 2-4 years of industrial biotechnology experience and 4-6 years' technical experience with protein purification, protein modification, and process scale-up. The ideal candidate for this position will have excellent organizational skills and will be comfortable managing several projects.

Becton Dickinson offers competitive salaries and an excellent benefits package. For immediate consideration, please send your resume (indicating area of interest) and salary history to: Manager of Human Resources, Becton Dickinson Immunocytometry Systems, 2375 Garcia Avenue, Mountain View, CA 94043. An equal opportunity employer.

Caring for people is our business

**BECTON
DICKINSON**

POSITIONS OPEN

INSTRUCTOR (Western Medicine) for a University oriental medicine/acupuncture program. Teach undergraduate and graduate courses including courses in pharmacology, western medical diagnosis, western medical terminology, histology, endocrinology, neuroanatomy, physiology, psychiatry, pathology; clinical medicine, clinical sciences including obstetrics/gynecology, urology, radiology, and infectious diseases, with requisite knowledge thereof.

Prepare and deliver lectures/demonstrations to students, stimulate discussions, compile, administer, and grade exams, direct research. Undertake postgraduate work/training in California and qualify therefore. Serve on committees. M.D. or equivalent required. No smoking on the job. Medical education must not be from medical school blacklisted by California Board of Medical Quality. All clinical rotation experience must be supported by individualized certificates as required by California Board of Medical Quality.

Monday through Friday, 8:00 a.m. to 12:00 noon, and 6:00 p.m. to 10:00 p.m.; Salary: \$28,000 per annum. Job site and interview: Garden Grove, California.

Send this ad and a résumé or letter stating your qualifications to: **Job #DC-7799, P.O. Box 9560, Sacramento, CA 92823-0956 not later than 14 September 1987.**

JUNIOR AND SENIOR FACULTY POSITIONS MOLECULAR BIOLOGY OF THE IMMUNE SYSTEM

The Department of Microbiology and Immunology invites applications for junior and senior level, tenure-track positions focusing on the molecular analysis of significant problems in immunology. Senior candidates should have strong records of research accomplishment with sustained program growth and development. Junior candidates will be expected to develop high quality, independent research programs with long-term growth potential. Teaching responsibilities, which emphasize quality rather than quantity, include medical, dental and graduate students. A large Center of Excellence grant has resulted in establishment of a Molecular Resource Center within the Department featuring state-of-the-art facilities for: oligonucleotide synthesis, peptide synthesis, hybridoma antibody production, amino acid analysis, protein/sequencing and flow cytometry. Funds for the initiation of research programs will be available and salaries will be highly competitive. Applications should consist of curriculum vitae, copies of several recent publications, a brief statement of future research goals and three letters of reference to be sent to: **Dr. Terrance G. Cooper, Department of Microbiology and Immunology, University of Tennessee, Memphis, 858 Madison Avenue, Memphis, TN 38163.** Applications will be received until 1 October 1987 or until the positions are filled thereafter. *The University of Tennessee is an Affirmative Action/Equal Opportunity Employer.*

MAMMALIAN BIOLOGY

The Museum of Zoology and the Department of Biology of The University of Michigan announce a joint tenure-track position in mammalian biology to begin as early as 1 July 1988. The appointment will be made at the level of assistant professor of biology/assistant curator of mammals, unless the experience and accomplishments of the successful applicant justify a higher rank. The appointee must have a Ph.D. degree prior to beginning duties, demonstrated commitments to research on systematics and evolutionary biology of mammals and to biological instruction, and qualifications to direct the curation of a large mammalogical research collection. Applications are particularly sought from qualified individuals pursuing a career in mammalian biology through work in such fields as molecular systematics, population biology/ecological genetics, cytogenetics and genomic structure, functional or evolutionary morphology, morphometrics, comparative neuroanatomy, developmental biology, or behavior. However, creative individuals working within an evolutionary context in other areas of mammalian biology are also encouraged to apply. Closing date for applications: 15 October 1987. Three letters of recommendation, curriculum vitae and copies of publications should be sent to: **Chair, Search Committee, Museum of Zoology, The University of Michigan, Ann Arbor, MI 48109.** *The University is a non-discriminatory/Affirmative Action Employer.*

POSITIONS OPEN

Yale University **INVERTEBRATE PALEONTOLOGIST**. The Department of Geology and Geophysics is soliciting applications for an assistant professor in invertebrate paleontology to begin in the academic year 1988 to 1989. A curriculum vitae, list of publications, and the names of three references should be sent by 1 October 1987 to: **Karl K. Turekian, Chairman, Department of Geology and Geophysics, Yale University, Box 6666, New Haven, CT 06511.**

Yale University is an Equal Opportunity/Affirmative Action Employer and encourages applications from all qualified scientists.

MATERIALS ENGINEER

The Energy Conversion and Utilization Technologies (ECUT) Program of the Office of Energy Utilization Research in the U.S. Department of Energy (DOE) has an immediate opening for a materials engineer with experience in research on new materials and materials processes relevant to the more efficient conversion and use of energy (energy conservation). Applicants must possess a bachelor's or higher degree in engineering or a related field (a Ph.D. degree is desirable in one of the materials-related disciplines such as chemistry, solid state physics, materials science, metallurgy, ceramics or the computational quantum theory of matter). Applicants must have an additional 3 years of experience in some aspect of materials research and development. The appointment is a permanent full-time position at the GS-14 level, \$45,763 to \$59,488 per year depending upon education and experience.

Duties: The incumbent will be responsible for planning and managing a materials applied research program of national scope which includes activities such as the design of materials, research on ductile ordered metallic alloys and on ceramics for high temperature applications, recycling polymeric materials and innovative or potentially revolutionary materials processes. Program implementation is accomplished through field organizations such as Government Laboratories, grants to universities or competitively selected industrial contracts.

Interested persons should submit a Standard Form 171 "Application for Federal Employment" (available at Federal Job Information Centers or from the address below) to: **Department of Energy, Office of Personnel, MA-205.2, Attention: Vacancy Announcement 87-CE-076, 1000 Independence Avenue, S.W., Washington, DC 20585.**

For further information contact: **Jeffrey Dowell, 202-586-8563.** Applications must be received by the above office on or before 30 September 1987, in order to be considered. *DOE is an Equal Opportunity Employer and qualified women and minorities are encouraged to apply. United States Citizenship is required for employment in the Federal Government.*

MOLECULAR CELL BIOLOGIST UNIVERSITY OF PENNSYLVANIA

A tenure-track position is available at a junior or senior level for an individual with an active research program using modern approaches to address fundamental problems of cell biology. The individual will join a faculty with interests in cell-cell interactions, membrane functions, cell motility, and developmental biology. Teaching responsibilities will be at both the undergraduate and graduate levels.

Please send curriculum vitae and three letters of reference to: **Dr. Rocky S. Tuan, Chairman, Cell Biology Search Committee, Biology Department, University of Pennsylvania, Philadelphia, PA 19104-6018** by 15 October 1987. *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer.*

MOLECULAR/CELLULAR PHARMACOLOGIST OR NEUROPHARMACOLOGIST. Tenure-track position at assistant professor or associate professor rank. Assistant professor requirements: At least 2 years of postdoctoral experience and potential to develop independent research program. Associate professor requirements: Five or more years of research/teaching experience in pharmacology or related discipline, evidence of excellent independent research, and current grant support. Molecular, cellular, or neurophysiological research approaches to pharmacological problems preferred. Curriculum vitae, description of career goals, proposed research program, and three or more letters of recommendation must be received by 15 November 1987. Address to: **Dr. Neil C. Moran, Chairman, Department of Pharmacology, Emory University, Atlanta, GA 30322.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

MOLECULAR BIOLOGIST

The Division of Atherosclerosis and Lipoprotein Research, Baylor College of Medicine and the Methodist Hospital, Department of Medicine, Houston, Texas, is undertaking a major expansion of research activities in the molecular biology of regulatory mechanisms of biosynthesis and catabolism of apolipoproteins, lipoproteins, cholesterol, and acyl lipids. Previous experience in the lipoprotein field is not necessary, and those with expertise in other areas are encouraged to apply. Established investigators with an ongoing research program and national funding are particularly encouraged to apply. Please send a statement of research interests, curriculum vitae, a listing of previous and current grant support, and names of four individuals who will provide letters of recommendation. Please direct correspondence to: **Dr. Louis C. Smith, Chairman, Molecular Biology Search Committee, The Methodist Hospital, Department of Medicine, Mail Station A-601, 6565 Fannin, Houston, TX 77030.** The position is now open. Candidates will be evaluated until the position is filled.

MOLECULAR BIOLOGIST

AGRION/Diamond Scientific is currently seeking a Molecular Biologist with a minimum of 2 years of postdoctoral experience. The candidate should have skill in classical and molecular virology, mammalian cell culture, and experience with mammalian viruses. The efforts will involve the application of photochemistry and conventional chemistry to the inactivation of viruses, and the cloning and expression of viral nucleic acids directed at the development of animal vaccines. This position requires a person who can manage a research team independently; it has substantial opportunity for personal and professional growth. Respond in confidence by sending your résumé to: **Dr. G. Wieseahn, R&D, Diamond Scientific, P.O. Box 328, Des Moines, IA 50302.** *Equal Employment Opportunity.*

MOLECULAR BIOLOGY APPLIED TO CHRONIC DISEASES: The Kennedy Institute of Rheumatology invites applications for an **ESTABLISHED SENIOR STAFF APPOINTMENT** (Lecturer/Senior Lecturer level) for scientist interested in application of molecular biology to fundamental problems underlying rheumatic diseases (e.g., autoimmunity and connective tissue structure and function). Previous knowledge of clinical medicine not necessary. Post offers scope for innovative and long-term developments and (multidisciplinary) collaboration with basic scientists in other disciplines, as well as clinicians.

Salary will be on Grade 1A (£9305 to £14825) or II (£14245 to £19310) of the Universities Research and Analogous Staff Scales according to age and experience, with an additional London Allowance of £1393.

Applications with the names of two referees to: **The General Secretary, The Kennedy Institute of Rheumatology, 6 Bute Gardens, London, W6 7DW,** to arrive by 30 September 1987 at latest.

Neuroscience faculty position available for a **NEUROPATHOLOGIST** dedicated to basic research efforts in schizophrenia and neurodegenerative disorders. The successful candidate will complement an existing core of independent neuroscientists and also occupy a pivotal position at the interface of our basic and clinical research programs. Rank and salary will be commensurate with experience. Send curriculum vitae, a brief description of projected research activities and names of at least three references to: **Neuroscience Program, Maryland Psychiatric Research Center, P.O. Box 21247, Baltimore, MD 21228.**

Seeking **POSTDOCTORAL FELLOW** to work on studies involving the regulation and expression of neurotransmitter synthetic enzymes. Extensive experience in tissue culture and biochemistry essential. Experience in molecular biology desirable, including eukaryotic gene expression in transfected cell lines. Projects focus on genomic, transcriptional and translational regulation of neurotransmitter enzymes in vitro using primary cell and explant cultures and cell lines. Funding available immediately. Send copy of curriculum vitae and three letters of reference to: **Dr. Dona Lee Wong, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA 94305.** *Stanford is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are encouraged to apply.*

Post Doctoral Fellowship Protein Biochemist (PhD)

The Quality Control Division of The Upjohn Company has an opening in its Biotechnology Development Unit for a post doctoral protein biochemist.

The successful candidate will have a PhD in chemistry or biochemistry and will join an ongoing program in the study of the solution state conformation of human renin, an enzyme involved in blood pressure regulation. Particular interest in protein folding will be valuable. The position is for two years and is available immediately. Publication of important findings is strongly encouraged.

Kalamazoo is a mid-sized Southwestern Michigan community offering an excellent mix of cultural/recreational opportunities including lakes, nearby colleges, and a four-season climate. The Upjohn Company offers an excellent salary, benefits and relocation plan.

For confidential consideration, please call from outside of Michigan toll free 1-800-253-8600, extension 3-6767; or inside Michigan collect (616) 323-6767 to request a specialized employment application be sent to you immediately. Please refer to Ad Number 20973B when calling. An Equal Opportunity Employer M/F

Upjohn

A second century of caring.

ASSOCIATE DIRECTOR/MARINE CENTER HEAD LOUISIANA UNIVERSITIES MARINE CONSORTIUM

The Louisiana Universities Marine Consortium, a state-supported organization of Louisiana's public universities, invites applications and nominations for the newly created position of **Associate Director of the Consortium**. The primary responsibility of the Associate Director is to serve as **Head of the Louisiana Universities Marine Center** in Cocodrie, Louisiana. Duties for the position include directing research and educational programs, administering operations of the Marine Center including research vessels, and assisting the Executive Director of the Consortium, Dr. Donald F. Boesch. The successful candidate is encouraged to maintain a program of independent research. Adjunct appointment to the faculty of one or more member institutions is expected.

The Marine Center contains 30,000 square feet of modern research and teaching laboratories. At present, there is a faculty of seven doctorate-level scientists. Research and teaching facilities are also used by faculty and students from member universities. Two oceanographic research vessels, *Pelican* (105 ft) and *Acadiana* (57 ft) are based at the Marine Center.

Applicants should be marine scientists with a strong record of accomplishment in research and with experience in administration of research programs. Applicants should send a resume and names of three references together with a letter of application by November 16, 1987 to: Dr. Michael Dagg, Chairman of Search Committee, Louisiana Universities Marine Consortium, Chauvin, Louisiana 70344.

An Equal Opportunity/Affirmative Action Employer

PROJECT MANAGERS Pharmaceuticals

Adria Laboratories, a rapidly expanding pharmaceutical company, is moving aggressively to meet R&D challenges in the development of human pharmaceuticals. As we undertake major research expansions, we seek project management professionals to oversee multidisciplinary project teams.

You will play a vital role in managing team members from Adria's R&D regulatory and marketing divisions in the planning, implementation, and completion of projects which will produce ANDA's and NDA's. Position qualifications include advanced degree or comparable experience, proven record of leadership accomplishments in a similar position within the pharmaceutical industry, with additional experience in R&D, regulatory affairs, or marketing.

This unique opportunity will position you for visibility and advancement on a management team that turns good ideas into reality, while Adria's Columbus, Ohio location surrounds you with an affordable and enviable quality of life. Adria's extreme financial strength allows us to offer an excellent salary and benefits package. To investigate Adria's growth and your ability to grow with us, send resume which must include current salary level to: **Adria Laboratories, Staffing—JWK, P.O. Box 16529, Columbus, OH 43216**. An Equal Opportunity Employer M/F/H/V.



ADRIA LABORATORIES

Research and product development scientists wanted to help bring a series of proprietary immunotoxin conjugates to market.

Immunotoxin Cancer Therapy

ImmunoGen, Inc. is dedicated to commercializing its immunotoxin conjugate cancer therapy technologies developed in conjunction with the Dana-Farber Cancer Institute in Boston, MA.

Increased scientific staff is now required as ImmunoGen enters clinical trials on its first round of commercial products. The Company is seeking *experienced* scientists (three at senior levels and three at junior levels) in the fields of:

Biochemistry & Protein Chemistry Cell Biology & Tissue Culture

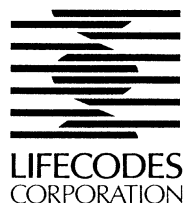
These positions offer the potential for considerable career growth in an atmosphere of multidisciplinary, innovative research and product development.

Duties will include: development of methods for large-scale production of antibodies, toxins and immunoconjugates for clinical trials; *in vitro* and *in vivo* toxicity testing; efficacy testing; and development of new therapeutic products based on monoclonal antibodies and other targeting agents.

ImmunoGen offers an excellent salary and benefit package as well as an opportunity for equity participation. The Company is now moving into a fully-equipped, state-of-the-art laboratory in Cambridge, Massachusetts—midway between the campuses of Harvard and MIT.

Please send a detailed resume including salary history and a statement describing your scientific interests and career goals. Confidentiality is assured. All responses will be acknowledged.

Reply to: **Dr. Walter Blattler, ImmunoGen, Inc., 124 Mt. Auburn Street, Suite 200, Cambridge, MA 02138**



NUCLEIC ACID CHEMISTS

Ph.D. and Technician Level

Lifecodes Corporation, a leading company in the use of DNA probes for human genetic diagnostics, is undergoing a major expansion and is committed to building a strong and innovative Department of Nucleic Acid Chemistry. To that end we are seeking nucleic acid chemists, both at the Ph.D. and technician level. Ph.D. level candidates would be expected to have a thorough understanding of the basics of organic chemistry. Research experience in either oligonucleotide or nucleic acid chemistry would be an asset. Technician level candidates would be expected to possess either a B.S. or M.S. degree in chemistry. Research experience in organic or biologically related areas would be a plus.

For the right individuals we offer an extremely attractive salary/benefits package, an exciting work environment, and excellent new research facilities located just 30 minutes from New York City in Westchester County.

If interested, please send your curriculum vitae with the names and telephone numbers of at least two references to:

**Nucleic Acid Chemistry Department
Lifecodes Corporation
4 Westchester Plaza
Elmsford, New York 10523**

National Institutes of Health National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Division of Kidney, Urologic, and Hematologic Diseases

Academic Physician or Ph.D.—BC/BE with interest in developing the basic scientific aspects of the renal, lower urinary tract, and hematopoietic systems. Full-time position. Time available to pursue research interests. Salary is negotiable, commensurate with qualifications and experience. How to apply: Submit an Application for Federal Employment (SF-171), curriculum vitae, bibliography, and names of three references to:

**Mr. Clifford Moss
Personnel Officer, NIDDK
Building 31, Room 9A34
9000 Rockville Pike
Bethesda, MD 20892
Telephone (301) 496-4231**

NIH is an equal opportunity employer; women and minorities are encouraged to apply. U.S. citizenship required.

Veterinary Pathologist

The Department of Experimental Pathology, Smith Kline and French Laboratories, is seeking experienced Veterinary Pathologists to participate in the discovery and development of new therapeutic agents. Smith Kline and French Laboratories, a leader in Pharmaceutical research, is located in suburban Philadelphia near Valley Forge.

Successful applicants must have demonstrated ability in experimental pathology with an M.S. or Ph.D., or through publication of scientific work. Participation in the design, conduct and reporting of toxicity studies is expected as are collaborative interactions with Research Departments; investigation of pathogenetic mechanisms is emphasized. A background in laboratory animal pathology is desired and board certification by the American College of Veterinary Pathologists is preferred.

SK&F Laboratories offers excellent compensation and benefits, an attractive relocation policy and a work environment that offers considerable opportunity for personal and professional growth. For confidential consideration, please forward your C.V. and the names of three references to: Mary Ann McCarry-C0044, Senior Employment Consultant -R&D, Smith Kline & French Laboratories, Research & Development, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.

SK&F
A SmithKline Beckman Company

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TOUCH WITH THE VENDORS WHOSE
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LAB AND WE WILL DO THE REST.

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**SCIENCE MAGAZINE
NEW LAB SERVICE DEPT.
1515 BROADWAY
NEW YORK, N.Y. 10036**

IMMUNOSCIENCE DIVISION

The growing \$4 billion success of Abbott Laboratories is due in part not only to aggressive R&D but also to the exceptional management for which we've won considerable recognition. These strengths extend to our Pharmaceutical Products Division, where we now seek two scientists to conduct research aimed toward discovering novel pharmaceuticals for the treatment of inflammatory and allergic diseases.

Joining our Discovery area, positions will work in a multidisciplinary team investigating the generation of lipid mediators under various *In vitro* and *In vivo* experimental conditions.

RESEARCH BIOCHEMIST

A knowledge of lipid biochemistry, enzymology, immuno assay and HPLC techniques is required. A Ph.D. and several years post-doctoral experience required.

RESEARCH PHARMACOLOGIST

Experience in developing *In vivo* assays to evaluate compounds designed to interfere selectively with inflammatory and allergic processes is desirable. A Ph.D. with several years post-doctoral experience required.

In addition to a stimulating professional and scientific environment, Abbott provides excellent salaries and full benefits including profit sharing and stock retirement plans. We are headquartered in an attractive suburban area just 30 miles north of Chicago. For confidential consideration, please send your resume with salary history to: **Patricia Handy/Corporate Placement, Dept. SCI, 8/28.** Abbott is an Affirmative Action Employer.

ABBOTT
ABBOTT PARK IL 60064

"Health Care Worldwide"

Postdoctoral Scientist Molecular/Cell Biologist

The Department of Cell Biology at Smith Kline & French Laboratories, located near Valley Forge, Pennsylvania, is seeking a Postdoctoral Scientist to join a multidisciplinary team developing new therapeutic strategies for the treatment of colon carcinoma. The successful candidate will use a combination of cDNA cloning and screening techniques to purify and characterize factors involved in the growth and differentiation of normal and malignant epithelial cells.

Our postdoctoral appointments are normally for a two year duration.

Candidates are required to have:

- a Ph.D. in Molecular or Cell Biology or Biochemistry with 0-3 years postdoctoral experience.
- expertise in gene cloning, expression vectors and growth factor assays.
- a good publication record.
- clear concise communication skills.

We offer excellent compensation and benefits as well as an attractive relocation policy. For confidential consideration, please send your curriculum vitae and the names of three references to: Robert F. Obst, R&D Senior Employment Consultant, R0091, Smith Kline & French Laboratories, Research and Development Division, P. O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.

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Genentech, Inc. is on the verge of dramatic growth as a major international pharmaceutical company. If you have high academic and scientific standards, we'd like to tap into your potential in the following positions:

Postdoctoral Researcher Microbial Molecular Genetics

We are seeking a Postdoctoral researcher to join a multidisciplinary team involved in metabolic pathway engineering of bacteria to produce small molecules. This position is available immediately.

Genentech, Inc. is seeking a highly motivated individual with a high degree of technical independence who has extensive training and interest in microbial genetics, physiology and recombinant DNA techniques. A PhD in the above areas along with a thorough knowledge of the literature and experience with microbial metabolism and a variety of genetic systems is required. #2109SW.

Postdoctoral Researcher Biochemistry

PhD in biochemistry, strongly motivated, with research experience in protein biochemistry, membrane biochemistry and enzyme kinetics. The project will focus on the structure and biochemistry of growth factors and their receptors and mechanism of signal transduction. #5001SW.

Postdoctoral Researcher Pharmacological Sciences

Position available for cell biologist and/or immunologist to participate in research involving one of the following areas: immunobiology of inflammation; cellular response to cytokines; effects of retroviral protein on immune cell function. Candidate should have 1-3 years' postdoctoral experience, preferably in one of the above areas. Experience in molecular biology, tissue culture, or gel electrophoresis desirable but not absolutely necessary. #5002SW. Curriculum vitae for this position only should be sent to Dr. George Cianciolo.

Please send your curriculum vitae indicating position number to: Human Resources, 460 Point San Bruno Blvd., South San Francisco, CA 94080. We are an equal opportunity employer.

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POSITIONS OPEN

PLANT CELL BIOLOGIST DEPARTMENT OF BOTANY, UNIVERSITY OF CALIFORNIA, DAVIS

The Department of Botany has a tenure-track faculty position available which can be filled at the assistant, associate or full professor level. The position is an 11-month appointment, 82% in the College of Letters and Science, and 18% in the College of Agriculture and Environmental Sciences. Starting date is negotiable.

Responsibilities: The person appointed will be expected to establish a nationally recognized research program in an appropriate area of plant, protistan or fungal cell biology. Preference will be given to candidates working at the molecular level. Participation in graduate and undergraduate instruction, supervision of graduate students, and university service are also required.

Qualifications: Applicants should have a Ph.D. and research experience in an appropriate area of biological science dealing with cell biology, such as biochemistry, genetics, or molecular biology.

Please send:

1. Curriculum vitae.
2. Official graduate transcripts (if applicant is within 5 years of receipt of the Ph.D.).
3. Lists and reprints of published works and submitted manuscripts.
4. Statement of teaching experience and interests.
5. Description of research accomplishments and future interests (include selected reprints).
6. Names, addresses and telephone numbers of at least three referees.

To: **Dr. William J. Lucas, Chairman of the Search Committee, Department of Botany, University of California, Davis, CA 95616.**

Application deadline: 30 September 1987 (including letters of recommendation). *The University of California is an Affirmative Action/Equal Opportunity Employer and invites applications from all qualified individuals.*

PLANT MOLECULAR BIOLOGIST—Assistant/associate professorship in the Department of Horticultural Science and Landscape Architecture, University of Minnesota. The faculty member in this 12-month, tenure-track position will establish a research program centered around improvement of horticultural crops important to Minnesota, using molecular biological approaches to identify and transfer genes controlling economically important traits. Securing extramural funding and collaboration with other scientists are expected. Teaching responsibilities will be consistent with the candidate's expertise and departmental needs. A Ph.D. in an area of biological science and 1 year of postdoctoral work in plant molecular biology are required. Curriculum vitae, undergraduate and graduate transcripts, a publication list, a three-page statement of research and teaching interests, and three letters of reference should be sent to: **Dr. John V. Carter, Chairman, Molecular Biology Search Committee, Department of Horticultural Science and Landscape Architecture, University of Minnesota, St. Paul, MN 55108.** Applications must be received by 30 September 1987.

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

POSTDOCTORAL ASSOCIATE—NUTRIENT CYCLING. University of Minnesota. The Natural Resources Research Institute of the University of Minnesota has an opening for a postdoctoral associate within the Center for Water and the Environment. We are seeking a person with expertise in aquatic systems specializing in either anaerobic processes or nutrient cycling. The initial appointment is for one year with a possibility of renewal depending upon performance. Applicant should have a strong background in chemistry and its application to ecosystem science. Minimum qualifications: Ph.D. in an environmental science. Desired qualifications: Ph.D. in an environmental science with a demonstrated ability to apply chemical expertise to ecosystem science. Salary: \$24,000 per year. Starting date: 1 January 1988. Applications must be postmarked by 15 September 1987. To apply, please send a résumé and names, addresses and phone numbers of three references to: **Dr. Robert J. Naiman, Director, Center for Water and the Environment, Natural Resources Research Institute, University of Minnesota, Duluth, MN 55811.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

POSITIONS OPEN

POSTDOCTORAL FELLOW

A postdoctoral position is available to study bacterial antigens in oral Gram-negative microorganisms. Candidate should have experience in the isolation, purification, and characterization of bacterial protein and carbohydrate antigens. Experience in recombinant DNA techniques desirable. This position is for 3 years of support on a NIH funded project. Salary is negotiable. Submit curriculum vitae to: **Joseph J. Zambon, Oral Microbiology Laboratory, Foster Hall, State University of NY at Buffalo, School of Dental Medicine, 3435 Main Street, Buffalo, NY 14214.** *We are an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION in molecular biology is available 1 October 1987 to study Mammalian Histone Gene Expression. The research position is available at the VA Medical Center and the Department of Biochemistry and Molecular Biology of the LSU Medical Center. Experience in recombinant DNA technology is desirable. Send curriculum vitae and names of references to: **Dr. Sidney R. Grimes, Research (151), VA Medical Center, 510 East Stoner Avenue, Shreveport, LA 71130.**

POSTDOCTORAL POSITION

Position available 1 August 1987. The group is researching into various aspects of the viral etiology of calf enteritis. These include research into the taxonomy of bovine astrovirus and bovine torovirus (Breda virus), isolation and characterization of coronavirus-like agents from cattle, and identification of the rotavirus genes coding from homologous and heterologous active immunity. The person appointed will be allocated to the research program best suited to their experience and interest. A Ph.D. or a D.V.M. with experience in virology is required, and some experience of molecular biological techniques will be an advantage. Send curriculum vitae and three letters of recommendation to: **Dr. G. N. Woode, Department of Veterinary Microbiology and Parasitology, College of Veterinary Medicine, College Station, TX 77843-4467.**

Texas A&M is an Equal Opportunity Employer.

POSTDOCTORAL POSITION available immediately for a Ph.D. or M.D. to work on expression of neurotransmitters and receptors during synaptogenesis. Project involves studying developing neurologically mutant mice using immunocytochemistry, autoradiography, monoclonal antibodies, cell and tissue culture, oligonucleotide probe generation, in situ hybridization, mRNA isolation, in vitro translation and related techniques. Send curriculum vitae and names of three references to: **Dr. Andrej Rotter, Department of Pharmacology, University of California, Irvine, CA 92717.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately for multidisciplinary project studying lignin biodegradation [*Nature* 326, 520 (1987)]. A Ph.D. in biochemistry or microbiology preferred. Experience in either enzymology, molecular biology, or microbial transformation desired. Send résumé, relevant publications, and names of three references to: **Dr. Ming Tien, Department of Molecular and Cell Biology, Penn State University, University Park, PA 16802.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS open immediately to study the transcriptional regulation and function of the recently identified human $\theta 1$ globin gene [see *Nature* 326, 717-720 (1987)], molecular genetics of human RNA polymerase II subunit genes, and/or homologous recombination in primate cells. Persons with Ph.D. degree and research experience in cells, proteins, and/or nucleic acids are encouraged to apply. Send curriculum vitae and reference to: **Dr. James Shen, Department of Genetics, University of California, Davis, CA 95616.**

TWO POSTDOCTORAL POSITIONS—available immediately to study role of human fetoplacental enzymes in chemical toxicity. Ph.D. in (bio)chemistry/pharmacology/toxicology is required. Experience in modern biochemical methods of enzyme purification such as HPLC, column chromatography, etc., is desirable. Salary: \$18,000 to \$22,000. Send curriculum vitae and references to: **Dr. Arun Kulkarni, College of Public Health, MHH104, University of South Florida, 13301 Bruce B. Downs Boulevard, Tampa, FL 33612.** Telephone: 813-974-3623.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study metalloenzymes involved in the biosynthesis of acetate from carbon monoxide by acetogenic bacteria. EPR, resonance Raman, UV-VIS and IR spectroscopies, molecular biology, and enzymology will be used to study a unique methyl transferase, a nickel, Fe-S protein, and a corrinoid/Fe-S protein. Experience in any of these areas is required. Send three letters of reference and curriculum vitae to: **Dr. Steve Ragsdale, Assistant Professor, Department of Chemistry, University of Wisconsin-Milwaukee, Milwaukee, WI 53201.** *The University of Wisconsin-Milwaukee is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE—

Position available for an electrophysiologist to characterize the properties of central axons which have regenerated along peripheral nerve implants. Preference given to applicants experienced in spinal cord physiology and/or tract-tracing, and histological techniques. Please send curriculum vitae with names of three references to: **Dr. Julia K. Terzis, Microsurgical Research Center, Eastern Virginia Medical School, 700 Olney Road, Norfolk, VA 23507.**

RADIATION ONCOLOGIST

The University of North Carolina (UNC) School of Medicine has established a new Department of Radiation Oncology, effective 1 July 1987. The Department is recruiting a radiation oncologist at the instructor to associate professor level. The proposed effective date of the appointment is 1 July 1988. Faculty rank will be based on qualifications and experience. Candidates should be Board-certified or Board-eligible with clinical radiation oncology experience, and interest in clinical research. An interest in teaching is also desirable. *Women and minorities are encouraged to identify themselves voluntarily.* *UNC is an Equal Opportunity/Affirmative Action Employer.* Please forward a current curriculum vitae with initial letter of inquiry by 30 September 1987 to: **Joel Tepper, M.D., Chairman, Department of Radiation Oncology, Radiation Oncologist Search, Basement APCF, North Carolina Memorial Hospital, Chapel Hill, NC 27514.**

RESEARCH ASSOCIATE. The Natural Resources Research Institute of the University of Minnesota has an opening for a research associate to join our program in Environmental Chemistry. Specifically, we are interested in expanding our program to include the development of (i) new parameters for quantifying chemical structures, (ii) knowledge-based systems for predictions of chemical behavior such as carcinogenicity and mutagenicity relationships, and (iii) innovative ways for applying structure-activity relationships to a variety of complex environmental problems. The successful applicant will be expected to develop an externally-funded research program in these areas. In addition, the position will include teaching advanced courses in biochemistry within the School of Medicine at the University of Minnesota, Duluth. Minimum qualifications: Ph.D. in biology, chemistry, or biochemistry, and 3 years of previous experience in structure-activity relationships of organic chemicals. Desired qualifications: academic training and postdoctoral experience in mathematics or statistics applied to biological and chemical problems, and publications in peer-reviewed journals demonstrating abilities in applying structure-activity relationships using topology and other graph theory techniques to problems in environmental biology and chemistry. Salary: open. Starting date: 1 October 1987. Applications must be postmarked by 15 September 1987. To apply, please send curriculum vitae, and the names, addresses, and phone numbers of four references to: **Personnel Manager, Natural Resources Research Institute, University of Minnesota, 3151 Miller Trunk Highway, Duluth, MN 55811.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

RESEARCH ASSOCIATE, M.S. OR Ph.D., 2- to 3-year position available immediately to study effect of dietary factors on development of hypertension in a variety of rat models. Interest in endocrinology, steroid hormones, and HPLC desirable. Send curriculum vitae to: **Dr. David J. Morris, Department of Laboratory Medicine, The Miriam Hospital, 164 Summit Avenue, Providence, RI 02906.** *An Equal Opportunity Employer, M/F.*

POSITIONS OPEN

RESEARCH ASSISTANT MOLECULAR BIOLOGY

Two positions immediately available to join active research groups in gene regulation. Studies currently ongoing include molecular analysis of surface receptors in cells of the immune system (T₄, FcR) in transgenic mouse and tissue culture systems and molecular strategies for parasite survival in *P. falciparum* malaria. Familiarity with molecular biology and its application is required. Excellent salary and benefits provided. Send curriculum vitae and list of references to:

Elizabeth Lacy
or
Jeffrey Ravetch
Program in Molecular Biology
Memorial Sloan-Kettering Cancer Center
1275 York Avenue
New York, NY 10021

RESEARCH ASSOCIATE POSITIONS available immediately for work on enzyme purification or drug metabolism or blood flow studies. Salary commensurate with experience. Ph.D. required. Send résumé with list of references to: Dr. J. L. Way, Department of Medical Pharmacology, Texas A&M University, Medical Sciences Building, College Station, TX 77843. *An Equal Opportunity/Affirmative Action Institution.*

RESEARCH ASSOCIATE

We are currently seeking a research associate for a full-time opportunity. Only applicants with the following need apply:

Minimum 2 years of bone marrow tissue culture experience, including CFU assays, manipulation of bone marrow, centrifuging and culturing specimens.

Qualified candidates should submit a résumé or call for an application: 213-224-5474. Kenneth Norris Jr. Cancer Hospital, 1441 Eastlake Avenue, Los Angeles, CA 90033. *Equal Opportunity Employer.*

KENNETH NORRIS JR. CANCER HOSPITAL

RESEARCH ASSOCIATE: Ph.D. organic/peptide chemist for studies on solid phase peptide synthesis. Send curriculum vitae and references to: Dr. J. M. Stewart, Biochemistry-B126, University of Colorado Health Science Center, Denver, CO 80262. *Affirmative Action/Equal Opportunity Employer.*

RESEARCH ASSOCIATES MOLECULAR BIOLOGY AND VIROLOGY

Cornell University Medical College invites applications for two postdoctoral positions in a multidisciplinary research laboratory studying alterations in lymphocyte receptors and differential gene activation following infection of human cells with retroviruses, including HIV. The ideal candidates will be experienced in cDNA library construction and cloning, and will collaborate with two other Ph.D.s with experience in protein chemistry and RNA biology. Applicants must have a Ph.D. Initial appointment is for 2 years, with the possibility of renewal and advancement. Send résumé and names of two references to: Dr. Jeffrey Laurence, Division of Hematology-Oncology, The New York Hospital-Cornell Medical Center, 525 East 68th Street, New York, NY 10021.

RESEARCH BIOCHEMIST, PH.D.

Position now available for outstanding investigator in program exploring thyroid hormone effect on mitochondrial oxidative phosphorylation. Columbia University appointment paying over \$32,000 per year plus fringe benefits. Salary depends on experience and previous productivity in subject area. Applicant *must* have publications on mitochondrial bioenergetics, and should be U.S. citizen. Send résumé, bibliography, and reprints to: Kenneth Sterling, M.D., VA Medical Center, 130 West Kingsbridge Road, Bronx, NY 10468.

RESEARCH TECHNICIAN

Full-time position available in medical/research center located in northeast Philadelphia. Will be involved in basic research in the area of biochemical, cellular, and molecular biology. Bachelor's degree in biology/biochemistry required. Previous research experience preferred. Send résumé with transcripts to: S.S., P.O. Box 24779, Philadelphia, PA 19111. *Equal Opportunity Employer.*

CHEMICAL PROFESSIONALS

Career Opportunities in Chemical Information

The Organization

Chemical Abstracts Service (CAS), a division of the American Chemical Society, is the acknowledged world leader in chemical information services. Founded in 1907, CAS produces a variety of printed, computer-based, and on-line information services.

The Opportunity

The continuing growth of CAS's information services has created a number of new editorial positions. These full-time, career opportunities allow scientists to make an important contribution to science by analyzing the world's chemical journal and patent literature.

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Biotechnology
Ceramic Engineering
Geochemistry
Immunochemistry
Mammalian Physiology
Metallurgy
Organic Chemistry
Pharmacology
Physical Chemistry

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Analytical Biochemistry	•	•	•	•	•
Biochemistry-Enzymologist				•	
Biotechnology	•				•
Ceramic Engineering			•	•	
Geochemistry			•		
Immunochemistry	•	•	•	•	•
Mammalian Physiology	•	•	•	•	•
Metallurgy			•	•	
Organic Chemistry	•	•	•	•	•
Pharmacology	•	•	•	•	•
Physical Chemistry				•	•

BS or MS Chemistry with strong Organic background for entry-level opportunities involving chemical structure analysis for technical information services are also available.

The Environment

CAS is located in Columbus, Ohio, a growing and dynamic metropolitan area with excellent housing, cultural, recreational, and transportation facilities. Our modern offices, situated in a campus-like setting, provide a professional, state-of-the-art working environment.

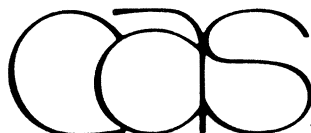
The Rewards

CAS provides a complete benefits package, which includes an excellent employer-paid retirement plan, relocation assistance, tuition reimbursement, and a range of insurance programs, as well as salary scales commensurate with your background and experience.

To apply for one of these positions, please call or send your resume to:

CHEMICAL ABSTRACTS SERVICE

Employment Department - S
P.O. Box 3012
Columbus, Ohio 43210
1-800-848-6538, ext. 3668



POSITIONS OPEN

RESEARCH POSITION: Cellular Immunology and Molecular Biology. The Pulmonary Unit (Medical Services) of the Massachusetts General Hospital has a staff opening for a Ph.D. with a strong background and experience in cellular immunology and molecular biology to work in newly expanded laboratory facilities. Experience in the use of in vitro techniques, including cell culture work, and interest in environmental/occupational immunology are desirable. Please send curriculum vitae and a brief description of research interests to: L. C. Ginns, M.D., Pulmonary Unit, Bulfinch 1, Massachusetts General Hospital, Boston, MA 02114. An Equal Opportunity/Affirmative Action Employer.

SENIOR CANCER RESEARCHER, Ph.D. in biology or chemistry required. Cancer research into the development of cloning techniques of human cytokines for therapeutic use. Forty hours per week. \$36,000 per year. Report to: New York State Job Service, 344 Fulton Avenue, Hempstead, NY, or nearest job service. Bring three copies of résumé with you. Job order #0604879 D.O.T. 041.061.026.

CALIFORNIA INSTITUTE OF TECHNOLOGY

SENIOR RESEARCH FELLOW IN HIGH ENERGY PHYSICS. The Caltech Division of Physics, Mathematics, and Astronomy invites applications for a Senior Research Fellow position in experimental elementary particle physics. Candidates must have a Ph.D. in this field with at least 3 years of postdoctoral research experience. Working experience in a large collaboration at a major accelerator center is required. The successful candidate must have demonstrated exceptional skills in the following areas.

- (i) Higher order QCD calculations.
- (ii) Large scale computer simulations of high energy physics processes, and detectors. Data analysis and programming of DEC and IBM computers.
- (iii) Design and construction of data acquisition systems for PDP and VAX computers.
- (iv) Motorola 6800 and 68000 interfaces and programming in assembler.
- (v) Digital and analog circuit design, construction and troubleshooting.
- (vi) Radiation damage effects in scintillating particle detectors.
- (vii) Calibration systems for large scale electromagnetic calorimeters.

Experience in the supervision of graduate students in all of these areas is also required.

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

Job Site: Pasadena, CA. Salary approximately \$30,000 per year.

Send a copy of this advertisement and résumé to: Professor H. Newman, 256-48 HEP, Caltech, Pasadena, CA 91125.

HUNTER COLLEGE OF THE CITY UNIVERSITY OF NEW YORK CENTER FOR GENE STRUCTURE AND FUNCTION TECHNICAL MANAGER FOR ELECTRON MICROSCOPE FACILITY

Hunter College of the City University of New York in conjunction with the development of a Research Center for Gene Structure and Function, is seeking a technical manager for a facility housing transmission and scanning electron microscope, as well as ancillary specimen preparation and photographic equipment. The candidate should present evidence of experience in operation and maintenance of electron microscopes, and in the relevant associate techniques. Candidates with expertise in the use of electron microscopy for analysis of nucleic acids, proteins, and macromolecular complexes are preferred. The Technical Manager will consult and collaborate with faculty and graduate students in a variety of research projects, and will be responsible for scheduling and for day-to-day maintenance and operation of the facility. An advanced degree or evidence of equivalent laboratory experience is required. The salary range is \$25,000 to \$35,000 depending upon qualifications, and there are excellent fringe benefits. Send your curriculum vitae and the names of three references no later than 25 September 1987, to: William D. Cohen, Department of Biological Sciences, Box 79, Hunter College of the City University of New York, 695 Park Avenue, New York, NY 10021.

Hunter College is an Equal Opportunity Employer.

POSITIONS OPEN

SENSORY NEUROPHYSIOLOGIST: Tenure-track possibility for position available at assistant professor level. Serious commitment to collaborative work within the Microsurgical Research Center. Expertise required to characterize electrophysiologically the properties of central axons which have regenerated along peripheral nerve implants. Preference given to applicants experienced in spinal cord neurophysiology, and tract-tracing and histological techniques. Please send curriculum vitae with three letters of recommendation to: Dr. Julia Terzis, Microsurgical Research Center, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501.

SYNTHETIC ORGANIC CHEMIST, Ph.D. POLYMER CHEMIST, Ph.D.

Senior level research positions are available for (i) a synthetic organic chemist with proven creative aptitude and with knowledge in nucleotide chemistry and (ii) a polymer chemist with experience in the interaction of nucleic acids and proteins with soluble polymers or with solid surfaces to develop in vitro assays for infectious disease. The company offers competitive salaries and excellent benefits. Send résumés to: Enzo Biochem, Department DP, 325 Hudson Street, New York, NY 10013.

TUMOR BIOLOGIST/RADIOBIOLOGIST

The University of North Carolina (UNC) School of Medicine has established a new Department of Radiation Oncology effective 1 July 1987. The proposed effective date of the appointment is 1 July 1988. The Department is recruiting at the associate professor level to head the Section on Tumor Biology in the new department. Candidates will have completed the Ph.D. in biological sciences or a related field and have extensive experience in animal systems or cell systems for the study of tumor biology and tumor response to chemotherapeutic and radiation agents. Emphasis will be placed on proven ability to attract extramural support. Women and minorities are encouraged to identify themselves voluntarily. UNC is an Equal Opportunity/Affirmative Action Employer. Please send a current curriculum vitae with initial letter of inquiry by 30 September 1987 to: Joel Tepper, M.D., Chairman, Department of Radiation Oncology, Radiobiologist Search, Basement APCF, North Carolina Memorial Hospital, Chapel Hill, NC 27514.

VERTEBRATE PEST MANAGEMENT ASSISTANT PROFESSOR

Tenure-leading assistant professorship available now. Appointment 88% extension, 12% teaching. Primary responsibilities are to develop and conduct extension programs concerning Integrated Pest Management (IPM) in Wildlife Damage Control, and to develop and evaluate effective, environmentally acceptable methods of preventing and controlling wildlife damage. Teaching includes an upper division course "Wildlife Damage Control", and occasional supervision of departmental seminar. Opportunity to supervise graduate students is available. Ph.D. in ecology, wildlife, or vertebrate zoology. An agricultural background or good understanding of agricultural production systems is preferred. Salary competitive and commensurate with qualifications and experience. Send letter of application, complete résumé, transcripts, and names of three references by 1 October 1987 (or until suitable candidate applies thereafter) to: Dr. Gary Hergenrader, Head and State Forester, Department of Forestry, Fisheries and Wildlife, 101 Plant Industry Building, University of Nebraska-Lincoln, Institute of Agriculture and Natural Resources, Lincoln, NE 68583-0814. Affirmative Action/Equal Opportunity Employer.

WILDLIFE SCIENTISTS. Two 12-month tenure-track faculty positions in the Department of Zoology, with 75% of responsibilities assigned to the Cooperative Wildlife Research Laboratory. (1) Assistant professor and (2) Assistant/associate professor carrying responsibilities of Assistant Director of the Cooperative Wildlife Research Laboratory. Specialties in wildlife toxicology or population ecology/genetics preferred. Detailed position descriptions and additional information sent upon request. Send by 15 October 1987, curriculum vitae, transcripts, copies of published papers, description of research interests, and names and telephone numbers of five references to: Dr. Alan Woolf, Assistant Director, Cooperative Wildlife Research Laboratory, Southern Illinois University at Carbondale (SIUC), Carbondale, IL 62901. Telephone: 618-536-7766. SIUC is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

TENURE-TRACK FACULTY POSITION IN PLANETARY SCIENCES, University of Colorado, Boulder. The University of Colorado is expanding and broadening its program of research and teaching in planetary sciences. The Department of Geological Sciences and the Laboratory for Atmospheric and Space Physics invite applications for a joint tenure-track faculty position in the field of planetary sciences. We seek a scientist with a record of independent research in one or more of the following areas: (i) photogeology, morphology and dynamic process of planetary surfaces; (ii) geochemical evolution of planetary surfaces; (iii) planetary surface-atmosphere interactions. Preference will be given to candidates at the assistant professor level, but applications from candidates at a higher level will be considered. The appointment will begin August 1988. Applicants should have a strong commitment to research, to working with graduate students, and to teaching at the graduate and undergraduate levels. To apply, please send curriculum vitae and arrange to have three letters of reference sent to: Chairman, Planetary Sciences Search Committee, Department of Geological Sciences, Campus Box 250, University of Colorado, Boulder, CO 80309-0250. Salary: Commensurate with qualifications. Application deadline: 31 October 1987. Applicants are responsible for making certain that the letters of reference arrive promptly. The University of Colorado at Boulder has a strong institutional commitment to the principle of diversity in all areas. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities and disabled individuals.

VIROLOGIST/ASSOCIATE DIRECTOR, MICROBIOLOGY

The Department of Pathology, Rhode Island Hospital, is seeking a Virologist and Associate Director of Clinical Microbiology. The successful candidate must qualify for an appointment as assistant professor at Brown University. Minimum requirements include: doctoral degree, Board eligibility or certification by the American Board of Medical Microbiology, a strong background in clinical microbiology and diagnostic virology, excellence in teaching, and a commitment to scholarly endeavors. Adequate time will be available to devote to research pursuits, preferably in areas of molecular virology/bacteriology. Applications must be received by 15 October 1987. Please send curriculum vitae and names of three references to: Tito Cavallo, M.D., Chairman, Search Committee, Department of Pathology, Rhode Island Hospital, 593 Eddy Street, Providence, RI 02902. Equal Opportunity/Affirmative Action Employer.

CONFERENCES

SECOND INTERNATIONAL CONFERENCE ON MOLECULAR BIOLOGY AND PATHOLOGY OF MATRIX PHILADELPHIA, PENNSYLVANIA 15 TO 18 JUNE 1988

Current research in the field of collagen and other extracellular matrix molecules will be presented by invited international experts. Poster sessions will also be held. For information, please write:

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Jefferson Medical College
Thomas Jefferson University
Philadelphia, PA 19107
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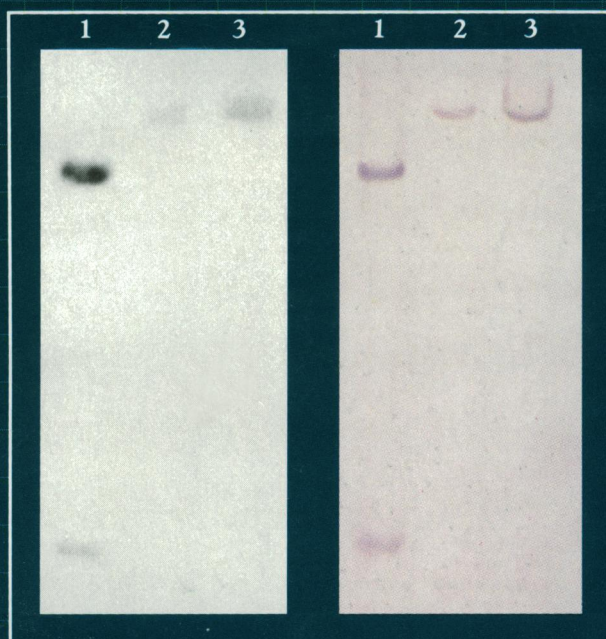
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greater sensitivity than previous nonradioactive methods. The high ratio of active enzyme to active streptavidin allows better visualization of low levels of DNA. Hybridization studies at BRL using pBR322 containing the 1.1-Kb Mst II fragment of the human β -globin gene have shown that BluGENE routinely detects 0.25 pg of insert DNA from 1.25 pg of EcoR I-digested plasmid.

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BRL's expertise in nonradioactive detection has resulted in a kit that's both sensitive and easy to use. BluGENE™ detects DNA on nylon or nitrocellulose filters, without expensive equipment or complicated procedures. Ask for the BluGENE protocol and brochure to see for yourself.

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After 3 hours a single-copy human β -globin gene was detected using autoradiography with an intensifying screen (left) and BluGENE (right).

Samples of a plasmid containing the 1.1-Kb Mst II fragment of the human β -globin gene in the EcoR I site of pBR322 (Chang, J. C. and Kan, Y. W. (1982) N. Engl. J. Med., 307, 30) were labeled by nick translation with [α - 32 P]dATP (1.5×10^8 dpm/ μ g DNA) (left) or biotin-11-dUTP (right) and hybridized to Southern blots for 18 hours under identical conditions. Lane 1 contains sheared herring sperm DNA (1 μ g) and EcoR I-digested plasmid (5 pg DNA: 4 pg vector in the upper band and 1 pg insert in the lower band). Lanes 2 and 3 contain 2 μ g and 10 μ g, respectively, of EcoR I-digested human genomic DNA.

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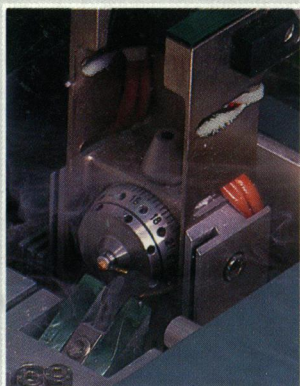
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- New Symbiotic Steady State/Temperature Regulation System – allows the user to **preset** temperature settings and maintain precise temperature equilibrium of the chamber, specimen and knife at the sectioning level.
- Redesigned Cryo Chamber – reduces average LN₂ consumption by 50%.

- One piece chamber mounting support provides greater stability.
- Increased cryo chamber working surface.
- Functionally segregated operating controls.

These and other new features make the Reichert-Jung FC4E better than ever for cryosectioning specimens for immuno-electronmicroscopy, morphological studies, element analysis, study of fast physiological process and material research. For more information on the new FC4E, call 716-891-3000.

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