

game. The new arrivals are, of course, behavioral ecologists, and in *Gulls and Plovers* Barnard and Thompson summarize the results of six years' work on the winter association of these three species.

Behavioral ecology and its intellectual parents ethology and ecology have a long-standing fascination with flocking birds. Three central ideas have been used to explain virtually all of the great variety of flocking systems: a feeding benefit, an increase in protection from predators, and information gain of some sort. Flocks have been seen as adaptive for one or more of these reasons, and the benefits of flocking have been assumed to be shared among all the flock members, even if they belonged to different species. The basic ideas are so simple that it has been a perplexing problem to imagine how such a diversity of types of flocks has arisen. But as with so many other subjects, the study of bird flocks underwent a decisive change in the 1970's under the influence of "gene thinking," and it proved a powerful insight that members of single or mixed-species flocks need not share a mutual benefit but instead can often be expected to join flocks to exploit others. The recent literature has many papers that develop this theme.

Nowhere are these ideas and the manner in which they influence the main flocking themes of feeding, predation, and information as fully developed as in this book. The relationships between these species turn out to be largely parasitic, with golden plovers exploiting the food-finding abilities of the lapwings and gulls exploiting both plovers by stealing prey. In turn, plovers use the gulls as sentinels. Barnard and Thompson explore many facets of this association in extensive detail, using a combination of observational and experimental techniques.

My main criticism is over a matter of omission. The implicit idea of a game, in the sense that gulls and plovers are playing an evolutionary game against each other (and themselves), barely receives any mention. This is puzzling, for it was a major theme of a recent volume edited by Barnard (*Producers and Scroungers: Strategies of Exploitation and Parasitism*, Croom Helm, 1984). The idea of a game is important because what the scroungers do depends on what the producers are doing and vice versa. This seems a promising direction for further research, and it is a pity it has not been followed up here.

The underlying story in this book is how the approach to questions about behavior has changed in the past decade. "In one way, this book is about three species of bird feeding on some fields in Nottinghamshire. In another, it is about the interaction be-

tween ecology, social behavior and predation. That a study of the former can lead to conclusions about the latter is a reflection of the recent, dramatic increase in our understanding of the evolution of animal behavior, an increase which stems from an integration of ideas from population biology, evolutionary theory and ethology." Those are the first three sentences of the book, and they sum it up very concisely.

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Letters about Science

Gentlemen of Science. Early Correspondence of the British Association for the Advancement of Science. JACK MORRELL and ARNOLD THACKRAY, Eds. Royal Historical Society, London, 1984 (distributor, Boydell and Brewer, Woodbridge, Suffolk, U.K.). viii, 382 pp. £10. Camden Fourth Series, vol. 30.

Scientific institutions, once they become established and successful, tend to acquire a spurious inevitability. The "British Ass.," forerunner of and model for the AAAS, is no exception. Founded in 1831, the BAAS grew in its first decade or two into such an influential scientific forum that in retrospect its success seemed natural and predictable. In reality, its foundation and the shape it took in its early years were the result of intensive argument and negotiation among a group of men with widely divergent aims and interests. Its course of development and even its survival were anything but predictable.

The story is one that has immense intrinsic interest for an understanding of the scientific enterprise and of the social role of the scientist in the modern world. It has been analyzed in fascinating detail by Morrell and Thackray in their earlier book, *Gentlemen of Science: Early Years of the British Association for the Advancement of Science* (Oxford University Press, 1981), which has already become a classic of its kind in the history of science. The present book has the same title, but its subtitle indicates its complementary character. It prints nearly 300 private letters, the most revealing of the thousands utilized in the earlier book, to illustrate the processes of social interaction by which the BAAS came into existence and developed its distinctive pattern of activities.

It would be difficult to exaggerate the importance of correspondence as a medium of scientific exchange in an age without telephones; and it is fortunate that fluent

and forceful letter-writing was a routine accomplishment at that time in the social strata from which science drew its strength. The letters printed here are not only valuable source material for the historian of early 19th-century science; they also make fascinating reading for anyone who is sensitive to the way things get done in the modern scientific world. For on the human level the contrasts between the 1830's and the 1980's are much less striking than might be expected. In these letters we find traces of many familiar tensions: arguments soaked in self-interest or expressed in terms of high-minded altruism; conflicts between the entrenched individualism of established leaders and the collectivist visions of lesser mortals; arguments about the proper qualifications of those with authority to speak and decide in the name of science; and conflicts over the desirable degree of patronage, direction, or even control of science by the state.

What gives piquancy to our reading of these issues, as they were debated among Morrell and Thackray's British "gentlemen of science," is that the explosive expansion of science and technology in the subsequent century and a half was not inevitable to them. The issues were still wide open, or at least were felt to be; there appeared to be many alternative directions that the scientific enterprise might take; and the "cultivators of science"—even the word "scientist" in its modern anglophone sense had yet to be coined when the BAAS was founded—believed with good reason that their actions could influence those directions decisively.

These letters should perhaps be required bedside reading for those responsible for modern science policy; certainly any practicing scientist with a sense of history will find them entertaining, instructive, and absorbing.

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Books Received

Collisionless Shocks in the Heliosphere. A Tutorial Review. Robert G. Stone and Bruce T. Tsurutani, Eds. American Geophysical Union, Washington, DC, 1985. viii, 115 pp., illus. \$18. Geophysical Monograph 34.

Collisionless Shocks in the Heliosphere. Reviews of Current Research. Bruce T. Tsurutani and Robert G. Stone, Eds. American Geophysical Union, Washington, DC, 1985. vi, 303 pp., illus. \$36. Geophysical Monograph 35.

The Coming Revolution in Agriculture. Harold Willis. Published by the author, P.O. Box 692, Wisconsin Dells, WI, 1985. xii, 223 pp., illus. \$8.95.

An Ecosystem Approach to Aquatic Ecology. Mirror Lake and Its Environment. Gene E. Likens, Ed. Springer-Verlag, New York, 1985. xiv, 516 pp., illus. \$49.

Elementary Particles. I. S. Hughes. 2nd ed. Cambridge University Press, New York, 1985. xvi, 349 pp., illus. \$49.50; paper, \$19.95.

Chromatography Microspheres

Uniform monodisperse polystyrene latexes may be made up to about 5 μm in diameter. They are rigid and able to withstand high pressures and do not soften until the temperature exceeds 100°C. These particles are available with either carboxyl surface functional groups or amidine groups or with a zwitterionic combination of both groups with an isoelectric point at pH 4.5 so that at neutral pH they carry a net negative charge. Both the positive and negative sites may be used for a variety of coupling reactions and are useful for dual procedures. Monodisperse latexes are compatible with most water-miscible organic solvents. When used as a column-packing material, they permit high flow rates and increased resolution. Interfacial Dynamics. Circle 571.

Electron Detector

The Robinson Backscattered Electron Detector allows scanning electron microscope users to image backscattered electrons. Atomic number discrimination exceeds 0.003Z; for atomic number 30, discrimination exceeds 0.1. Its illumination eliminates charging artifacts and excessive edge brightness. It functions at television scan rates. It is capable of spatial resolution of less than 8 nm. The Robinson detector offers a high signal-to-noise ratio for accelerating voltages of 20 kV. It has an active collecting area of more than 2000 m^2 . ETP-USA. Circle 564.

Analyzer for Thiols and Disulfides

This analyzer allows selective detection of thiols and disulfides by electrochemistry. In isocratic operation, the detector is sensitive to 1 pmol or less. A controlled-temperature, electrically shielded compartment isolates critical components. The gradient elution

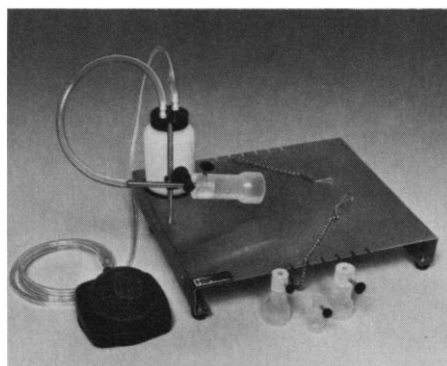
capacity of this instrument makes it possible to analyze molecules of differing polarity in a single experiment. Recommendations for the analysis of thiols and disulfides in peptide digests, aviation and automobile fuels, and biological fluids are described in a series of applications notes. Bioanalytical Systems, Circle 566.

Incubation Tray

Accutran is a disposable incubation tray for protein immunotransfer tests such as confirming presence of antibodies to HTLV-III. The incubation tray allows easy manipulation of multiple samples of nitrocellulose strips in blot tests with minimum handling. The design of the separate channels of the tray eliminates cross-contamination of sample sera. The channel surfaces will not bind proteins or other biological materials. Reagents added to a channel remain entirely free to react with the sample. Steps such as incubation, washing, and development may all be performed without removing the strip from the tray's channel. Schleicher & Schuell. Circle 568.

Rodent Surgery

A stainless steel operating table is available with an anesthetizing system. The table is 10 inches wide by 15 inches long and stands 1.5 inches high. It will accommodate rodents up to 700 g in weight. Retractors



are secured to notches on the sides of the table. The anesthesia system consists of a vertical post on the table and three contoured face masks. An adjustable clamp is used to adjust the height and angle of a mask. The masks are suitable for a range of animal sizes from 40 to 700 g and allow access to the frontal area of the brain. There is also a bottle mounted in a nontipping well for the anesthetic. A foot-operated pump delivers the gas mixture to the mask. Harvard Apparatus. Circle 565.

Shaker Platform

A universal platform offers more than 200 mounting holes. It will handle as many as 12 sizes of Erlenmeyer flasks (simultaneously, if necessary) as well as slant racks and test-tube racks. Flasks may range in size from 25 ml to 6 liters and test tubes may range in size from 13 to 25 mm. The holes are threaded to facilitate repeated changes of rack and clamp configurations. These platforms are adapted for use with gyratory shakers and, in concert with these devices, will operate properly even with heavy or unbalanced loads. New Brunswick Scientific. Circle 570.

Micropositioning Unit

Model HSS-1 is an automatic positioning system for electrophysiology and cell research. It is designed for vibration-free, high-speed stepping even at high magnifications. It is accurate and offers resolution of 0.1 μm . The advance speed may be set at less than 4 mm/sec. The MS 21 S control unit controls the high-speed stepper to allow a maximum advance of about 10 mm/sec. For cells with a higher membrane resistance, the interval switch offers a pulsing advance when intervals and interruptions may be set free of steps. Stepping may be achieved in three dimensions with optional drives. A rotating device mounted on the base plate provides 360° rotation. H&R Optical Systems. Circle 572.

Literature

Ethylene Oxide Gas Guidelines is developed for the safety of users of this type of sterilization equipment. Training guidance is emphasized. AMSCO/American Sterilizer. Circle 546.

Lab Data Acquisition describes hardware and software for scientific and engineering users of the IBM PC. Items for gas and liquid chromatography are featured. Interactive Microware. Circle 547.

Inorganic Materials for academic and industrial laboratories are cataloged including certified chemicals from reagent grade to four-nines purity. Custom-Pure materials are accompanied by a written assay to certify the content. Spex Industries. Circle 548.

Instruments for the Laboratory describes thermometers, electrodes, timers, conductivity meters, and many other precision measuring devices. Exttech Instruments. Circle 549.

New Titles features four dozen new works on biological and biochemical topics including volumes I through IV of *Chemical Reaction Dynamics*. CRC Press. Circle 554.

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card and placing it in a mailbox. Postage is free.

Frankia and Actinorhizal Plants. M. Lalonde, C. Camiré, and J. O. Dawson, Eds. Nijhoff, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xii, 208 pp., illus. \$45. Developments in Plant and Soil Sciences, vol. 18. From a symposium, Quebec, Aug. 1984. First published as *Plant and Soil*, vol. 87, no. 1.

The Freshwater Mollusca of Northern Africa. Distribution, Biogeography and Palaeoecology. Dirk van Damme. Junk, Dordrecht, 1984 (U.S. distributor, Kluwer, Hingham, MA). xiv, 164 pp., illus. \$55. Developments in Hydrobiology 25.

From Black Clouds to Black Holes. Jayant V. Narlikar. World Scientific, Singapore, 1985 (U.S. distributor, Taylor and Francis, Philadelphia). viii, 147 pp., illus. \$33; paper, \$14.

Frontiers in Physiological Research. D. G. Garlick and P. I. Korner, Eds., Cambridge University Press, New York, 1985. x, 391 pp., illus. \$95. From a congress, Sydney, Australia, Aug. 1983.

Geochemistry in Petroleum Exploration. Douglas W. Waples. International Human Resources Development Corp., Boston, 1985. x, 232 pp., illus. \$54; paper, \$32.

Geographical Dimensions of Energy. Frank J. Calzonetti and Barry D. Solomon, Eds. Reidel, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). x, 516 pp., illus. \$59.50. Geographical Library, vol. 5.

The Geography of Peace and War. David Pepper and Alan Jenkins, Eds. Basil Blackwell, New York, 1985. vi, 222 pp., illus. \$45; paper, \$14.95.

Graf Zeppelin and Hindenburg. The Golden Age of the Great Passenger Airships. Harold G. Dick with Douglas H. Robinson. Smithsonian Institution Press, Washington, DC, 1985. 226 pp., illus. \$24.95.

Gravitational Physics of Stellar and Galactic Systems. William C. Saslaw. Cambridge University Press, New York, 1985. xviii, 491 pp., illus. \$90. Cambridge Monographs on Mathematical Physics.

Gravity Field, Seismicity and Tectonics of the Indian Peninsula and the Himalayas. R. K. Verma. Reidel, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xviii, 213 pp., illus. \$44. Solid Earth Sciences Library.

Groups. A Path to Geometry. R. P. Burn. Cambridge University Press, New York, 1985. xii, 242 pp., illus. \$49.50.

Handbook of Behavioral Group Therapy. Dennis Upper and Steven M. Ross, Eds. Plenum, New York, 1985. xii, 513 pp. \$50. Applied Clinical Psychology.

Indigenous Agricultural Revolution. Ecology and Food Production in West Africa. Paul Richards. Hutchinson, London, and Westview, Boulder, CO, 1985. 192 pp., illus. \$22.50.

International Nomenclature of Diseases. Vol. 2, Infectious Diseases. Part 1, Bacterial Diseases. Council for International Organizations of Medical Sciences, Geneva, 1985. xxiv, 158 pp. Paper, 20 SwF.

Is Prevention Better Than Cure? Louise B. Russell. Brookings Institution, Washington, DC, 1986. x, 134 pp. \$26.95; paper, \$9.95.

Islamic Metalwork. In the Freer Gallery of Art. Esin Atil, W. T. Chase, and Paul Jett. Smithsonian Institution Press, Washington, DC, 1985. 273 pp., illus. Paper, \$17.50.

Languages for Automation. Shi-Kuo Chang, Ed. Plenum, New York, 1985. xii, 520 pp., illus. \$75. Management and Information Systems. Based on two workshops, Chicago, 1983, and New Orleans, 1984.

Legal Issues in Pediatrics and Adolescent Medicine. Angela Roddey Holder. 2nd ed. Yale University Press, New Haven, Conn., 1986. xxii, 357 pp. \$35.

Molecular Biology of Aging. Gene Stability and Gene Expression. R. S. Sohal, Linda S. Birnbaum, and Richard G. Cutler, Eds. Raven, New York, 1985. xiv, 351 pp., illus. \$54.50. Aging, vol. 29.

Molecular Biology of DNA Methylation. Roger L. P. Adams and Roy H. Burdon. Springer-Verlag, New York, 1985. xiv, 247 pp., illus. \$55. Springer Series in Molecular Biology.

Mural Painting in Ancient Peru. Duccio Bonavia. Indiana University Press, Bloomington, 1985. xiv, 225 pp., illus. \$57.50. Translated from the Spanish by Patricia J. Lyon.

Myths of Gender. Biological Theories about Women and Men. Ann Fausto-Sterling. Basic Books, New York, 1986. xii, 258 pp., illus. \$18.95.

Naissance et Enfance des Etoiles. Birth and Infancy of Stars. Robert Lucas, Alain Omont, and Raymond Stora, Eds. North-Holland, Amsterdam, 1985 (U.S. distributor, Elsevier, New York). xlii, 823 pp., illus. \$159.95. Les Houches, Session 41. NATO Advanced Study Institute. From a summer school, Les Houches, France, Aug. 1983.

Organized Technology. Networks and Innovation in Technical Systems. Wesley Shrum. Purdue University Press, West Lafayette, IN, 1985. xviii, 274 pp. Paper, \$4.50. Science and Society.

Oriental Stories as Tools in Psychotherapy. The Merchant and the Parrot. N. Peseschkian. Springer-Verlag, New York, 1985. xviii, 166 pp., illus. Paper, \$9.95. Translated from the German ed. (Frankfurt am Main, 1979). Reprint, 1982 edition.

Palladium Reagents in Organic Syntheses. Richard F. Heck. Academic Press, Orlando, FL, 1985. xx, 461 pp., illus. \$99. Best Synthetic Methods.

Perspectives in Southern Hemisphere Limnology. B. R. Davies and R. D. Walmsley, Eds. Junk, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xiv, 263 pp., illus. \$65.50. Developments in Hydrobiology, vol. 28. Reprinted from *Hydrobiologia*, vol. 125 (1985). From a symposium, Wilderness, South Africa, July 1984.

Plasma Fibronectin. Structure and Function. Jan McDonagh, Ed. Dekker, New York, 1985. xvi, 269 pp., illus. \$59.75. Hematology, vol. 5.

Polarized Electrons. Joachim Kessler. 2nd ed. Springer-Verlag, New York, 1985. xii, 299 pp., illus. \$42. Springer Series on Atoms and Plasmas, vol. 1.

Psychiatry, Human Rights and the Law. Martin Roth and Robert Buglass, Eds. Cambridge University Press, New York, 1985. xii, 241 pp. \$47.50.

Psychologie Développementale. Problemes et Réalités. J. Bideaud and M. Richelle, Eds. Mardaga, Brussels, 1985. 350 pp., illus. Paper, BF 1450. Psychologie et Sciences Humaines.

QED. The Strange Theory of Light and Matter. Richard P. Feynman. Princeton University Press, Princeton, NJ, 1985. xii, 158 pp., illus. \$18.50.

Radiotelescope. W. N. Christiansen and J. A. Högbom. 2nd ed. Cambridge University Press, New York, 1985. x, 265 pp., illus. \$59.50.

Rates of Phase Transformations. R. H. Doremus. Academic Press, Orlando, FL, 1985. x, 176 pp., illus. \$29.

Safety of Computer Control Systems 1985. Achieving Safe Real Time Computer Systems. W. J. Quirk, Ed. Published for the International Federation of Automatic Control by Pergamon, New York, 1985. x, 181 pp., illus. \$38. From a workshop, Como, Italy, Oct. 1985.

Semiconductors and Semimetals. Vol. 22, Lightwave Communications Technology: Part E, Integrated Optoelectronics. W. T. Tsang, Ed. Academic Press, Orlando, Fla., 1985. xx, 325 pp., illus. \$53.

South Light. A Journey to the Last Continent. Michael Parfit. Macmillan, New York, 1985. xii, 306 pp. \$17.95.

Space, Time, and Life. The Probabilistic Pathways of Evolution. V. V. Nalimov. Robert G. Colodny, Ed. ISI Press, Philadelphia, 1985. xx, 110 pp., illus. \$24.95. Translated from the Russian by A. V. Yarkho.

Spacecraft Attitude Dynamics. Peter C. Hughes. Wiley, New York, 1985. xii, 564 pp., illus. \$47.95.

Space Travel. A History. Werner von Braun and Frederick I. Ordway III with Dave Dooling. Harper and Row, New York, 1985. xii, 308 pp., illus., + plates. \$29.95. New edition of *History of Rocketry and Space Travel*.

The Spider Infraorder Mygalomorphae (Araneae). Cladistics and Systematics. Robert J. Raven. American Museum of Natural History, New York, 1985. 180 pp., illus. Paper, \$13. Bulletin of the American Museum of Natural History, vol. 182, article 1.

Spirit of Enterprise. The 1984 Rolex Awards. Aurum, London, 1984. xx, 460 pp., illus. £12.

State Energy Policy. Current Issues, Future Directions. Stephen W. Sawyer and John R. Armstrong, Eds. Westview, Boulder, CO, 1986. xxii, 307 pp., illus. Paper, \$22.50. Westview Special Studies in Natural Resources and Energy Management.

Stationary Sequences and Random Fields. Murray Rosenblatt. Birkhäuser, Boston, 1985. 258 pp. \$34.95.

The Statistics of Natural Selection on Population Dynamics. Bryan F. J. Manly. Chapman and Hall, (Methuen), New York, 1985. xvi, 484 pp., illus. \$55. Population and Community Biology.

Tectonic Geomorphology. M. Morisawa and J. T. Hack, Eds. Allen and Unwin, Winchester, MA, 1985. xiv, 390 pp., illus. \$40. From a symposium, Binghamton, NY, Sept. 1984.

Vitamin B-6. Its Role in Health and Disease. Robert D. Reynolds and James E. Leklum, Eds. Liss, New York, 1985. xvi, 477 pp., illus. \$78. Current topics in Nutrition and Disease. From a conference, Banff, Alberta, Canada, Oct. 1984.

Personnel Placement

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Immunologist. Ph.D. Extensive research experience in university and industry. Excellent publications and references. Seeking responsible position in development of hybridomas/monoclonal antibodies for use in cancer therapeutics/diagnostics, and in area of immunomodulators. Box 43, SCIENCE. 3/28; 4/4

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Microbiologist/Biochemist, Ph.D. Extensive teaching experience. Microbiology research and clinical background. Twenty-nine publications. Seek position in Chicago area. Box 54, SCIENCE. 3/28; 4/4

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Microbiologist, immunology-immunotoxicology, Ph.D. Experienced research scientist and teacher. Manuscripts in: American Journal of Veterinary Research, American Industrial Hygiene Association Journal, Applied Microbiology, Infection and Immunity, Journal of Invertebrate Pathology, Journal of Theoretical Biology, Journal of Toxicology and Environmental Health, Poultry Science, Toxicology and Applied Pharmacology, Toxicology Letters, Veterinary and Human Toxicology, Veterinary Immunology and Immunopathology. Author of invited book chapter. Numerous invited presentations, abstracts, and published proceedings. Box 58, SCIENCE. 3/28; 4/25

Microbiologist. Ph.D. in microbiology in 1984. Two years of postdoctoral experience. Demonstrator in B.Sc. microbiology laboratories. Experienced in microbiological, immunological, physiological, and biochemical techniques, as well as field work. Special techniques include two-dimensional gel electrophoresis, plant tissue culture, electron microscopy, GC, TLC, HPLC, GC-MS, use of N-15 isotope dilution technique to study dinitrogen-fixation in pots and field inoculation studies. Recently learned bacterial genetic techniques of gene transfer, plasmid analysis, DNA extraction, and so forth, and would like to learn more. Desires a research position, preferably in biotechnology laboratory. High-quality publications. Contact: Dr. D.K. Jain, Agriculture Canada Research Station, Lethbridge, Alberta, Canada T1J 4B1. Telephone: 403-327-4561. X

Peptide Chemist, Ph.D. Experienced in solid phase and solution methods of peptide synthesis, purification of synthetic peptides by HPLC, and gas phase sequencing. Box 57, SCIENCE. X

Zoologist/Paleontologist, graduated, is looking for an engagement as a scientific illustrator (drawings of biological and paleontological objects for publications, and so forth.) Free cooperation is preferred. Box 41, SCIENCE. X

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ACADEMIC UROLOGIST at the University of Michigan Medical Center. Position is at the instructor level. Candidates should be Board-certified or eligible in urology, have completed residency by time of appointment, have demonstrated skills as a clinical urologist, research experience, and interest in an academic career. Direct inquiries to: **Edward J. McGuire, M.D., Professor and Head, Section of Urology, Department of Surgery, The University of Michigan Hospitals, 2918 A. Alfred Taubman Health Care Center, Box 0330, 1500 East Medical Center Drive, Ann Arbor, Michigan 48109.** The University of Michigan is a nondiscriminatory, Affirmative Action Employer. PCN 265.

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The Department of Anatomy at the Medical College of Virginia, Richmond, is seeking an anatomist/cell biologist to fill a collateral (non-tenure track) position at the instructor, assistant professor, or associate professor level, beginning 1 July 1986. For the greater academic ranks, applicants should have completed postdoctoral training and be capable of establishing an independent research program supported with extramural funds. Individuals who utilize molecular approaches in the study of immunobiology, reproductive biology, or neurobiology are encouraged to apply. Willingness and competence in teaching histology/cell biology, and/or gross anatomy to medical and graduate students is required. A curriculum vitae, representative publications, and the names of three references should be sent to:

**Dr. William P. Jollie, Professor and Chairman
Department of Anatomy
Medical College of Virginia
Box 709, MCV Station
Richmond, Virginia 23298**

Deadline for receipt of applications is 15 April 1986. The Medical College of Virginia (Virginia Commonwealth University) is an Equal Opportunity/Affirmative Action Employer.

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ASSISTANT PROFESSOR Biology Department Saint Michael's College

Applications are invited for entry level, tenure-track position in Biology Department. Responsibilities include teaching a one-semester biochemistry course and upper division biology course along with other department offerings. Teaching load is 12 contact hours each semester. In addition, the successful candidate will be expected to initiate an active research program which will incorporate undergraduate students. Strong preparation in biochemistry, versatility in biology, and Ph.D. required. More detailed information is available from the biology chairperson. Preferred starting date is January 1987, however, September 1987 is alternative. Send résumé along with at least three letters of evaluation by 15 August 1986 to: **Personnel Office, St. Michael's College, Winooksi, VT 05404.** An Equal Opportunity Affirmative Action Employer.

ASSISTANT PROFESSOR INVERTEBRATE PHYSIOLOGIST/ ECOLOGIST MISSISSIPPI STATE UNIVERSITY

Applications are invited for a tenure-track assistant professor position in the area of invertebrate physiological ecology. Duties include teaching undergraduate and graduate courses and developing a strong independent research program. Individuals strongly motivated toward graduate education and who are interested in the cell to whole animal approach in relating ecological phenomena to physiological ones are being sought. Qualifications include a Ph.D. degree and experience (dissertation, postdoctoral training, and so forth) in physiological ecology research. The appointment will be effective August 1986.

In applying, please send curriculum vitae, a brief statement of research interests, and names of four references to: **Dr. H. Wyman Dorough, Professor and Head, Department of Biological Sciences, Mississippi State University, P.O. Drawer GY, Mississippi State, MS 39762.** All material should be received by 1 May 1986. Mississippi State University is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR—DEPARTMENT OF BIOCHEMISTRY—Outstanding opportunity for postdoctoral individual who will develop an independent research program in some area of molecular biology. Candidate will be expected to participate in the medical and graduate school teaching programs. The institution offers an exciting and interactive environment in the area of molecular biology and the successful candidate will be given the prerequisite start-up funds to establish their laboratory immediately. Please send curriculum vitae and names of three references to: **Search Committee, Department of Biochemistry, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, NY 10029.** An Equal Opportunity Employer.

ASSISTANT PROFESSOR MOLECULAR BIOLOGY/GENETICS

The Department of Microbiology, Louisiana State University (LSU), Baton Rouge, Louisiana, as part of an expansion program, invites applications for tenure-track positions, rank open, with preference at the assistant professor level. Candidates must have postdoctoral experience, strong credentials in microbiology and/or molecular biology/genetics, and a commitment to establish a research program in one of the following areas: (i) gene expression or genome organization in microorganisms, (ii) molecular biology/genetics with applications in biotechnology, (iii) molecular biology/genetics as related to agricultural microbiology. Send curriculum vitae, a description of future research plans, and a list of three references by 11 April 1986 to: **Dr. R. J. Siebeling, Department of Microbiology, 508 Life Sciences Building, Louisiana State University, Baton Rouge, LA 70803.** LSU is an Equal Opportunity/Affirmative Action Employer.

THE DEPARTMENT OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, THE STRITCH SCHOOL OF MEDICINE, LOYOLA UNIVERSITY OF CHICAGO, is seeking an ambitious tenure-track faculty member at the rank of ASSISTANT PROFESSOR. The candidate should have a Ph.D. and/or M.D. degree, postdoctoral experience, and the capability to develop a productive, independent research program, attract research support, and to teach.

The Department of Pharmacology and Experimental Therapeutics currently consists of ten full-time basic science faculty members. Their research areas encompass neuropharmacology, neurotoxicology, psychopharmacology, neuroendocrinology, hematology, clinical pharmacology, pharmacology of ganglionic neurotransmission, and anuran acoustic neuroethology. Teaching involves an active graduate and medical student training program.

The position is available immediately. Salary is competitive. Candidates should send their curriculum vitae, three letters of recommendation, representative reprints, and a synopsis of their current and future research interests to: **Dr. Israel Hanin, Chairman, Department of Pharmacology and Experimental Therapeutics, Loyola University Medical Center, 2160 South First Avenue, Maywood, IL 60153.** Telephone: 312-531-3261.

Loyola University is an Equal Opportunity Employer.

ASSISTANT PROFESSOR-MICROBIOLOGIST/ MICROBIAL BIOCHEMIST

Applications are invited for a full-time, tenure-track appointment at the assistant professor level effective 1 August 1986, in the department of Microbiology and Cell Science, College of Agriculture, University of Florida. The successful candidate will have demonstrable ability to teach well, and to carry out high-quality, productive research. Qualifications include a Ph.D. in microbiology, biochemistry, molecular biology, or related discipline. Appointee will be expected to participate in an introductory microbiology lecture course one semester a year, and to teach in the graduate program in his/her area of expertise. Send letter of application, curriculum vitae, list of published and completed research, future research plans, and names and addresses of three references by 1 July 1986 to:

**Dr. Phillip M. Achey
Search and Screen Committee
Department of Microbiology and Cell Science
1059 McCarty Hall/University of Florida
Gainesville, FL 32611**

Regional Medical Associate

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Expansion opportunities have created an opening in Seattle, for a Regional Medical Associate to combine scientific expertise and marketing skills. Responsibilities are to establish effective relationships within key medical institutions, providing scientific liaison and indepth information essential to appropriate use of SK & F's products. Will also have training responsibility at the Representative, Medical Staff, and Pharmacy levels. 30-40% Travel.

Qualifications include PhD in Pharmacology, Biochemistry, Microbiology, or other Life Sciences required. Must possess initiative, strong communication skills, and interest in Marketing.

In addition to an independent work environment where personal and professional growth are a way of life, we offer an outstanding compensation/benefits package geared to today's market. Please send resume and current earnings to:

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Research Scientist Head, Mass Spectrometry Group Laboratory of Molecular Biophysics National Institute of Environmental Health Sciences National Institutes of Health

The Laboratory of Molecular Biophysics, National Institute of Environmental Health Sciences has an opening for Head of the Mass Spectrometry Group. The Group has broad research interests in the application of Mass Spectrometry and related techniques to environmental health studies, in addition to providing a service to other scientists in the Institute. Research areas include: the analysis of peptides and oligonucleotides by tandem mass spectrometry; profiling and quantification of endogenous and exogenous compounds using highly selective chromatography-mass spectrometry (LC-MS) to the analysis of pesticides, drug metabolites and other samples of biological origin; and application of Tandem Mass Spectrometry in gas phase ion chemistry. Instruments available include: VG ZAB-4F Tandem Double-Focusing Mass Spectrometer; VG ZAB-2F and 7070E Sector Instruments; and Finnigan 3300 and VG-12-250 Quadrupoles.

Duties of the Group Leader include the supervision of independent and collaborative research programs and of the analytical service provided to Institute scientists. Minimum educational requirements are a four year course of study in an accredited college or university leading to a bachelor's degree with major study in chemistry, physics, physical chemistry or a related discipline and a doctorate in the specialty area. Applicants must have a demonstrable record of research achievement in the application of mass spectrometry to biochemical, pharmacological, toxicological or environmental problems. Some experience in research program planning and implementation is desirable.

This is a Civil Service career/career-conditional appointment under the Merit Pay System at the GM-13/14/15 level with a salary range \$37,599 to \$67,940 depending on the qualifications of the applicant selected. Benefits include Civil Service Retirement/Social Security, life and health insurance. This is a supervisory position and may require the incumbent to serve a one year probationary period. U.S. citizenship is required. Submit application package for physical sciences positions (available at all Federal Job Opportunity Centers and Federal Personnel Offices), curriculum vitae, and names of three references by April 21, 1986.

Mr. Bruce Wiggins, Code: HN-V2K(1)
National Institute of Environmental Health Sciences
PO Box 12233 (MD 1-01)
Research Triangle Park, North Carolina 27709
Telephone (919) 541-3317

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BIOTECHNOLOGY POSITIONS BS/MS/PH.D.

GIBCO/BRL is well known as a leading supplier of specialty products for biotechnology. We are also recognized for our active involvement in the forefront of research and development.

As we continue to grow, we offer qualified individuals the opportunity to contribute to our success. We are currently seeking candidates with the following interests:

PRODUCTION—Experience in protein/nucleic acid purification and assay methods. BS/MS in biochemistry. Knowledge of large scale production methods helpful.

DEVELOPMENT—Experience in immunodiagnosics development. Knowledge of immunodetection techniques and hybridoma technology. BS/MS/Ph.D. in immunology or microbiology.

RESEARCH—Experience in DNA and RNA manipulation, molecular cloning and nucleic acid hybridization methods. Ph.D., MS, BS with a minimum of 2 years of experience.

These positions offer competitive salaries and benefits. For consideration, please send your resume, in confidence, to:

Mr. Wayne E. Fowler
GIBCO/BRL Division
Life Technologies, Inc.
Box 6009, 8717 Grovemont Circle
Gaithersburg, MD 20877
(A suburb of Washington, D.C.)

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Postdoctoral Scientist Renal Pharmacology

Smith Kline & French Laboratories, located in suburban Philadelphia, Pennsylvania, is seeking an outstanding individual to join its Renal Pharmacology Section as a Postdoctoral Scientist.

We consider postdoctoral studies to be of major importance in an individual's career and encourage publication of findings in leading journals and full interaction with the scientific community. Our postdoctoral appointments are normally of 2 years duration.

The successful candidate will:

- conceive, plan, and conduct (with supervisor) experimentation in 1) experimental hypertension or 2) physiology and biochemistry of vasopressin-stimulated water reabsorption.
- apply techniques in whole animal pharmacology/physiology, renal and membrane biochemistry and/or endocrinology to 1) describe and characterize the mechanism(s) of elevated blood pressure in models of experimental hypertension or 2) elucidate the physiological and biochemical mechanisms and sites of vasopressin-stimulated urine concentration in dogs, and to identify and search for suitable markers in human kidneys.

Candidates are required to have:

- a Ph.D. in Pharmacology, Physiology or Biochemistry or related discipline.
- experience with conscious large animal physiological methodologies and/or *in vitro* hormone/adenylate cyclase techniques.
- knowledge of experimental hypertension, vasopressin pharmacology/physiology and/or the renal concentrating mechanism.
- demonstrated high quality science.
- excellent communication skills.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your CV and the names of three references to: Walter B. Flagg, Senior Employment Consultant, SmithKline Beckman Corporation, 1566 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

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POSITIONS OPEN

ASSISTANT PROFESSOR

The Department of Pathology is recruiting a tenure-track position for a molecular biologist or immunologist. Individual applying must have a Ph.D., or M.D. or equivalent and several years of postdoctoral training. Send curriculum vitae to: **Karel Raska, Jr., M.D., Ph.D., Department of Pathology, University of Medicine and Dentistry of New Jersey—Rutgers Medical School, P.O. Box 101, Piscataway, NJ 08854. An Equal Opportunity/Affirmative Action Employer, M/F/H/V.**

UNIVERSITY OF FLORIDA

Outstanding candidates, with a Ph.D. or M.D. degree and postdoctoral training in enzyme action and metabolic control, should apply for a tenure-track position at the **ASSISTANT PROFESSOR, ASSOCIATE PROFESSOR, OR FULL PROFESSOR** rank (15 August 1986 anticipated starting date). The successful candidate will have exceptional research and teaching achievements as evidenced by a current curriculum vitae, publication list, summary of research objectives, and three letters of reference. Address all correspondence to: **Search Committee Chairperson, Department of Biochemistry and Molecular Biology, Box J-245, JHMC, University of Florida, College of Medicine, Gainesville, Florida 32610, by 1 May 1986.**

Equal Employment Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF ANATOMY AND NEUROSCIENCES. Recruiting a tenure-track position for an individual who can assist in teaching microscopic anatomy and develop a research program in area related to cell biology, histology, or developmental biology. Two years of postdoctoral training required. Applicants should send curriculum vitae, summary of proposed research and letters of reference to: **Dr. William D. Willis, Chairman, Department of Anatomy and Neurosciences, University of Texas Medical Branch, Galveston, Texas 77550.**

The University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF PHARMACOLOGY AND TOXICOLOGY. Applications are invited by the Department of Pharmacology and Toxicology, University of Arizona College of Pharmacy, for an assistant professor with research interests in toxicology. The applicants should possess a Ph.D. degree in toxicology, pharmacology, or related disciplines; 2 or more years of postdoctoral experience; demonstrated excellence in research; and an active interest in teaching at both the undergraduate and graduate levels. The candidates will be expected to establish and support an independent research program. Areas of specific interest to the department include, but are not limited to: neurotoxicology, immunopharmacology and toxicology, developmental toxicology, and molecular and/or biochemical pharmacology. Applicants should send a detailed curriculum vitae and names of three references by 15 July 1986, to: **Dr. I. Glenn Sipes, Head, Department of Pharmacology and Toxicology, College of Pharmacy, The University of Arizona, Tucson, Arizona 85721. An Equal Opportunity/Affirmative Action Employer.**

ASSISTANT PROFESSOR OF BIOLOGY. Two-year appointment with the possibility of becoming tenure-track to teach microbiology, immunobiology, and cell biology courses. Ability to teach human anatomy and physiology to nursing students helpful. Excellent teaching credentials necessary. Ability to direct undergraduate research important. Ph.D. required. Send letters, résumé, and transcripts to: **Dr. L. M. Lutton, Biology Department, Mercyhurst College, Erie, PA 16546, by 2 May 1986. Affirmative Action/Equal Opportunity Employer.**

ASSISTANT PROFESSOR (RESEARCH)—The Department of Pharmacology at Wayne State University School of Medicine is seeking applicants with a Ph.D. in biochemistry for research position. Applicants should have at least 2 years of postdoctoral experience; record of productive research in area of lysosomal proteinases and proteinase inhibitors; and show promise of, or have record of, scholarship and extramural funding success. Send curriculum vitae to: **Dr. Bonnie F. Sloane, Department of Pharmacology, Wayne State University School of Medicine, Detroit, MI 48201.**

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

POSITIONS OPEN

ASSISTANT PROFESSOR(S) OF PHARMACOLOGY

Applications are invited for two non-tenure track **faculty positions** in the Department of Pharmacology and Toxicology at the Medical College of Virginia, Campus of Virginia Commonwealth University. Applicants must have at least 2 years of productive, postdoctoral training as evidenced by publications in high-quality peer-reviewed journals and be capable of initiating an independent research program. Specific areas are molecular pharmacology of receptors and signal transduction in (i) leucocytes or (ii) exocrine glands. The successful candidate should have experience in evaluation of receptors by both pharmacological and ligand binding analysis, as well as expertise in measurement of inositol lipid metabolism, protein phosphorylation, and/or arachidonic acid metabolism. Each position will carry some administrative and teaching responsibilities and the successful applicants will be expected to obtain independent funding. Salary and starting dates are negotiable. Applicants should specify in a cover letter for which position (leucocyte or exocrine gland) they are applying. Send curriculum vitae and names of three references by 1 June 1986 to:

**Dr. Richard J. Freer, Chairman
Search Committee**

**Department of Pharmacology and Toxicology
Medical College of Virginia
Box 524**

Richmond, Virginia 23298-0001

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ASSISTANT PROFESSOR—MOLECULAR NEUROBIOLOGY

The Section of Molecular Neurobiology, Yale University School of Medicine, invites applications for a starting level assistant professorship. Applicants should work on neurobiological problems and have primary training in molecular biology. Those now in a postdoctoral fellowship are preferred. To apply, send curriculum vitae, statement of research interests, and two letters of recommendation before 15 May 1986 to: **Dr. Charles F. Stevens, Chairman, Section of Molecular Neurobiology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510. Yale University is an Equal Opportunity/Affirmative Action Employer. Women and members of minority groups are encouraged to apply.**

ASSOCIATE PROFESSOR/PROFESSOR PHARMACOLOGY

The Department of Pharmacology and Toxicology at the Indiana University School of Medicine invites applications for a tenure-track position at the **professor/associate professor** level starting as early as 1 July 1986. Candidates should have a Ph.D. in pharmacology or a related discipline, teaching experience at the graduate/professional level, and a demonstrated ability to develop an independent research program and secure extramural funding. Individuals with research interests which involve recombinant/molecular biological orientation are preferred, but outstanding applicants working in other areas are encouraged to apply. Interested individuals should send curriculum vitae and references to: **Dr. Joseph A. DiMicco, Search/Screen Committee Chairman, Department of Pharmacology and Toxicology, Indiana University School of Medicine, 635 Barnhill Drive, Indianapolis, Indiana 46233. Indiana University is an Affirmative Action/Equal Opportunity Employer.**

ASSOCIATE OR FULL PROFESSOR in the Department of Geography and Fellow of the Cooperative Institute for Research in Environmental Sciences (CIRES). Starting date September 1986. Tenured position to pursue research within the Center for Earth Observations and Remote Sensing (CEORS), in the area of snow and ice hydrology using remote sensing methods. Strong background in radiative transfer, modeling, and digital image processing, as well as a record of grant support required. Candidate will participate in establishing an interdisciplinary curriculum in remote sensing and will teach two courses per academic year. Please submit a letter of application, recent curriculum vitae, a statement of research and teaching interests, and names of three referees before 15 May 1986 to: **Dr. Alexander F. H. Goetz, CIRES, Campus Box 449, University of Colorado, Boulder, CO 80309. Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

ASSISTANT PROFESSOR OF PHYSIOLOGY

The Division of Basic Medical Sciences has an opening for an assistant, possibly associate, professor with specialization in cardiovascular and/or respiratory physiology. The successful applicant would be expected to have an active research program that would add to existing strengths in physiology and neuroscience. Teaching responsibilities would fall within the areas of cardiovascular and respiratory physiology.

Interested applicants for this tenure-track position should submit curriculum vitae, a description of research interests, and the names and addresses of three referees to:

**Dr. Dale Corbett
Division of Basic Medical Sciences
Faculty of Medicine
Memorial University of Newfoundland
St. John's, Newfoundland
CANADA A1B 3V6**

In accordance with Canadian immigration policy, preference will be given to citizens and permanent residents of Canada.

OHIO UNIVERSITY PROGRAM IN MOLECULAR AND CELLULAR BIOLOGY

Seeks applications for **TWO ASSISTANT PROFESSOR**, tenure-track positions (an animal molecular biologist and a plant molecular biologist) to complement the program in molecular and cellular biology, as well as the respective departments that participate in the program. This is a major commitment to the development of research excellence in the areas listed. Ph.D. with training in recombinant DNA technology and significant experience in gene cloning and expression are required for both positions. Experience in gene transfer in plants is desired for the plant position. Significant start-up funds and support services are available. Applications must be received by 1 May 1986 and must include a formal letter of application, curriculum vitae, and a statement of research interests and projects. Applicants should arrange for three letters of recommendation to be sent to the appropriate search committee chair: **Dr. Peter Johnson, Animal Molecular Biologist Search, Department of Chemistry, or Dr. Norman Cohn, Plant Molecular Biologist Search, Department of Botany, Ohio University, Athens, OH 45701. Ohio University is an Affirmative Action/Equal Opportunity Employer.**

BIOLOGY: Berea College—Assistant or associate professor—tenure-track position. Position requires background in cell physiology, molecular biology, Ph.D., experience as an undergraduate teacher, and some research experience required. Teaching responsibilities in the areas of cell physiology, molecular biology, genetics, and introductory courses in biology. Berea is a liberal arts college with special commitments to the Appalachian region, interracial education, and an understanding of the Christian traditions. Write: **Dr. Richard Barnes, Berea College, CPO 94, Berea, KY 40404.**

Applications are invited from Canadian citizens or permanent residents of Canada who wish to be nominated for an **NSERC UNIVERSITY RESEARCH FELLOWSHIP** in the 1987 competition. There is special interest in candidates with research interests in microbiology, cell biology, animal developmental biology, and plant physiology. However, outstanding candidates in other areas will also be considered. The position(s) are available in the Department of Biology, University of Ottawa, at a salary equivalent to the assistant professor level. The University of Ottawa is a bilingual institution: the ability to lecture in French, as well as in English will be a definite asset. The appointee will become a member of the Ottawa-Carleton Centre for Graduate Studies and Research in Biology, a cooperative program between the University of Ottawa and Carleton University, which includes active collaboration with scientists from several government laboratories.

Applicants should submit, by 15 June 1986, curriculum vitae and a brief description of research interests and should arrange to have three letters of recommendation sent to: **Dr. J. McNeill, Department of Biology, University of Ottawa, Ottawa, Canada K1N 6N5.**

SENIOR RESEARCH BIOLOGIST

The Microbiology Department of the Sterling-Winthrop Research Institute has an opening for a Senior Research Biologist in the Synthetic Antibacterial Section. This scientist will participate in a multidisciplinary team effort to identify and characterize novel DNA gyrase inhibitors. Specific emphasis will be placed on elucidating the mechanism of cell killing by this class of drugs.

The successful candidate will possess a PhD in Enzymology/Molecular Biology or a related discipline with post doctoral research experience. Experience isolating and characterizing eukaryotic or prokaryotic topoisomerases is desirable.

We offer an attractive salary and benefits package with the opportunity for professional growth. The Institute is located near Albany, NY which is a center for summer and winter recreational activities.

Please send CV including salary requirements in confidence to:

Nancy E. Laranjo,
Employee Relations Administrator



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VETERINARY PUBLIC HEALTH/PREVENTIVE MEDICINE

The Department of Veterinary Pathobiology, College of Veterinary Medicine, University of Illinois at Urbana-Champaign intends to expand the activities of the Division of Veterinary Public Health/Preventive Medicine by filling 4 tenure-track positions at the assistant or associate professor level over a 2-year period.

The **Veterinary Epidemiologist** is expected to develop a creative and productive research program in basic or applied epidemiology which may include molecular, analytical or econometric approaches to animal disease problems. Essential qualifications include a doctorate in a veterinary or related science with evidence of advanced training in the field of epidemiology (MS, MPH or PhD).

The **Biomedical Statistician** is expected to conduct independent and collaborative research in study design, data analysis, and interpretation of statistical findings. Essential qualifications include a PhD with emphasis in biomedical statistics and research design; experience in biomedical computing including database management, programming and data analysis; consulting experience providing support to faculty and graduate students in the areas of quantitative analysis, experimental design, and computing.

The **Veterinary Clinical Epidemiologist** is expected to conduct basic and applied research in herd health/preventive medicine with emphasis on quantitative decision-making approaches to herd-health management. Essential qualifications include a DVM degree with advanced training (MS or PhD) and experience in preventive health management of food-producing animal species.

The **Public/Environmental Health Epidemiologist** is expected to develop a research and training program in epidemiology and public health with emphasis on zoonotic or chronic diseases, environmental health epidemiology or comparative medicine. Essential qualifications include a doctorate in a veterinary or related science with evidence of advanced training in the field of public and environmental health (MS, MPH or PhD).

Salary for these positions is negotiable. Review of applications will begin April 15, 1986, but applications will be accepted for each position until a suitable candidate is found. Those interested are encouraged to write to the address below for additional information on the qualifications, responsibilities and departmental goals for each position. Address inquiries or applications (including a curriculum vitae and the names of 3 references) to

Dr. Ronald D. Smith, Chairman
Epidemiology Search Committee
Department of Veterinary Pathobiology
College of Veterinary Medicine
University of Illinois
2001 S. Lincoln
Urbana, IL 61801
(Toll. (217) 333-3290)

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Metabolic Autoimmune Research Opportunity

Becton Dickinson and Company Research Center is seeking an energetic, innovative and productive Immunobiologist to assume a major technical role in the development of diagnostic tests directed toward metabolic autoimmune disorders.

This position requires a strong background and substantial experience in regulating immune response with extensive work on B and T cell interaction. Gene cloning or expression library preparation very beneficial.

If you are a PhD level immunologist and have 3 or more years of post doctoral training or equivalent with a demonstrable record of accomplishment in metabolic autoimmune research, we would like to talk with you about this new opportunity in our diagnostics research program.

Becton Dickinson offers excellent salaries, comprehensive benefits and the opportunity to become a major contributor in a dynamic organization. Please send your resume and salary history in confidence to: Mr. F. Richard Wilson, Manager, Human Resources, Becton Dickinson Research Center, P.O. Box 12016, Research Triangle Park, NC 27709. No agencies, please. An equal opportunity/affirmative action employer.

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POSITIONS OPEN

BIOCHEMISTRY FACULTY

Chemistry Department needs a biochemist to assume a primary responsibility in teaching biochemistry and toxicology. A Ph.D. or equivalent advanced degree is required. Qualified individuals are encouraged to submit their résumé and references by 1 May to: **Academic Dean, Cleveland Chiropractic College, 6401 Rockhill Road, Kansas City, Missouri 64131.**

UNIVERSITY OF NEBRASKA-LINCOLN BIOTECHNOLOGY COORDINATOR

Responsibilities include research and facilitating the development of an expanding biotechnology and molecular biology program in the College of Arts and Sciences and the Institute of Agriculture and Natural Resources of this major land grant university. Substantial resources are available to support research in any area of basic molecular biology.

A 12-month academic appointment in the School of Biological Sciences at the level of associate professor or full professor with tenure is available. Rank and salary are negotiable.

Send nominations and applications with names of three references by 1 May (or until suitable candidates apply thereafter) to:

**Dr. Myron K. Brakke, Chairman
Search Committee**

**School of Biological Sciences
348 Manter Hall Life Sciences
University of Nebraska-Lincoln
Lincoln, Nebraska 68588-0118**

Telephone: 402-472-2166 or 472-2858

Affirmative Action/Equal Opportunity Employer

CARDIOVASCULAR PHYSIOLOGIST. Research instructor position available immediately in cardiovascular physiology. Candidates must demonstrate knowledge in the peripheral circulation, with emphasis on the effect of immediate hypersensitivity reactions (anaphylaxis) on coronary and/or cerebral circulations.

Minimum requirements: Ph.D. in cardiovascular physiology; 3 years of postdoctoral experience dealing with the peripheral circulation; knowledge in computer-based experimental analysis of data and use of radioactive material for flow and volume measurements.

Submit in writing curriculum vitae and three references to: **Dr. F. A. Bashour, University of Texas Health Science Center at Dallas, Department of Physiology, 5323 Harry Hines Boulevard, Dallas, TX 75235.**

The University of Texas Health Science Center at Dallas is an Equal Opportunity Affirmative Action Employer.

CHAIRMAN, DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS

The University of Health Sciences/The Chicago Medical School invites applications for the position of **chairperson of the Department of Physiology and Biophysics.** The candidate should be an established, active researcher, with teaching and administrative experience. Current department research includes cardiac bioelectrics, coronary circulation, membrane channel function, renal handling of organic solutes, experimental hypertension, and photic control of reproduction. Qualified applicants should send their curriculum vitae to: **Max Harry Weil, M.D., Ph.D., Chairman of the Search Committee for Physiology and Biophysics, University of Health Sciences/The Chicago Medical School (UHS/CMS), 333 Green Bay Road, North Chicago, Illinois 60064.**

UHS/CMS is An Affirmative Action/Equal Opportunity Employer.

RESEARCH DIRECTOR

Cleveland Chiropractic College needs an individual with research experience to administer the basic and clinical research efforts of the college. A Ph.D. or equivalent is required. Qualified applicants are encouraged to submit their résumé and references by 1 May to: **Academic Dean, Cleveland Chiropractic College, 6401 Rockhill Road, Kansas City, Missouri 64131.**

POSITIONS OPEN

BALL STATE UNIVERSITY MUNCIE, INDIANA

CELL/MOLECULAR BIOLOGIST

Tenure-track assistant professor, September 1986. Specific area open; prefer strength in teaching and research in molecular, cell, and/or regulatory biology. Earned doctorate and commitment to undergraduate teaching required. Applications considered until position filled. Send curriculum vitae, list of publications, letter of interest, and names of three referees to: **Dr. Sidney L. Beck, Chairman, Department of Biology, Ball State University, Muncie, IN 47306.**

Ball State University practices Equal Opportunity in Education and Employment.

CELL/DEVELOPMENTAL BIOLOGIST

The Department of Biological Sciences at Rutgers University, New Brunswick, New Jersey is seeking applicants for a tenure-track position at the assistant professor level to begin fall 1986. Candidates must have demonstrated independent research productivity and capable of attracting research support. Research interest should be in molecular aspects of cell or developmental biology. Qualifications require postdoctoral experience, and the ability and willingness to teach at both the undergraduate and graduate levels. Send curriculum vitae and names of three references to: **Cell Biology Search Committee, Office of the Chair, Department of Biological Sciences, P.O. Box 1059, Piscataway, NJ 08854, before 30 April 1986.**

Rutgers is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR OF RECOMBINANT DNA LABORATORY

A person with experience in recombinant DNA and molecular biology techniques is needed to direct the daily activities of a recombinant DNA Core Laboratory. The opportunity and funds will be available for independent research and collaborations with other laboratories. If not experienced in all techniques, some on-the-job training is possible. Salary depends on previous experience and degrees. Send curriculum vitae and three references to: **Dr. John Donelson, Department of Biochemistry, University of Iowa, Iowa City, Iowa 52242. An Equal Opportunity Employer.**

DIRECTOR SCIENCE AND TECHNOLOGY PROGRAMS NATIONAL RESEARCH COUNCIL

The NRC/COMMITTEE ON SCHOLARLY COMMUNICATION WITH THE PEOPLE'S REPUBLIC OF CHINA seeks applications for a senior staff position directing science and technology programs. Responsibilities include coordination, liaison with high-level Chinese and American counterparts, fund-raising and program development. A Ph.D. or equivalent in science/engineering or China studies with significant international experience including scientific or commercial experience with China is required. Additional requirements include demonstrated administrative leadership and a creative view of international scientific relations. Chinese language ability preferred. Professors interested in 2-year appointments are encouraged to apply. Competitive salary, based on rank and experience and generous benefits package. Please reply in confidence to: **NRC/CSCPRC Personnel Office, Position number 220.056, 2101 Constitution Avenue, NW, Washington, DC 20418. An Equal Opportunity Employer.**

ENTOMOLOGY POSITION AVAILABLE

Tenure-track position for an entomologist (Ph.D.) with a training in either insect developmental/reproductive physiology or insect population genetics. The successful candidate will be expected to develop an active research program, and teach at both the undergraduate and graduate level in his/her area of specialization. Rank and salary will be commensurate with professional experience, as determined by the collective agreement between the university and the Professors' Union. While proficiency in French is not necessary at the time of hiring, the successful candidate will be expected to teach in French within a reasonable period. Applications, together with three letters of recommendation, to be sent to: **Dr. L. Huot, Chairman, Department of Biology, Université Laval, Québec, G1K 7P4, Canada.** Applications accepted through 1 July 1986, or until a suitable candidate is found. *Equal Opportunity Employer.*

POSITIONS OPEN

CURATOR/ASSISTANT OR ASSOCIATE PROFESSOR PALEONTOLOGY

The University of Alaska Museum at the University of Alaska-Fairbanks offers a tenure-track curatorial-professorial position in paleontology for the fall of 1986.

Applicants must have a doctorate in a paleontologic discipline and proven research capability. Specialization in pre-Cenozoic invertebrate paleontology with emphases in systematics and biostratigraphy or micropaleontology is preferred. Museum experience in collections management is required.

Primary responsibilities are development and management of collections having a northern emphasis and including fossil invertebrates, microfossils, fossil plants, and Pleistocene mammals, as well as some geologic materials.

This is a joint appointment with the Department of Geology and Geophysics requiring teaching of one course per year and supervision of graduate students. Appointment will be at the rank of assistant or associate professor for 9 to 12 months, depending on availability of funds.

Applications will be accepted through 30 April 1986, or until the position is filled. Send curriculum vitae and names of three or more referees to:

**Dr. David F. Murray, Chair
Search Committee**

**University of Alaska Museum
Fairbanks, AK 99775-1200**

The University of Alaska is an Equal Opportunity/Affirmative Action Employer and Educational Institution.

DIVISIONAL FELLOW IN MATERIALS SCIENCE \$35,000 to \$60,000 per year

The Lawrence Berkeley Laboratory is seeking a scientist to initiate research on polymer conformation and flow and molecular forces within molecular distances of surfaces. Complete responsibility for research in project area. The successful candidate will be appointed divisional fellow in the Center for Advanced Materials' Polymers Program for a term of up to 5 years, with the expectation that the fellow's professional accomplishments and growth will lead to consideration for promotion to staff senior scientist. Candidates are expected to have an earned doctorate in a relevant discipline and sufficient direct experimental research experience with surface force measurements to establish an independent research program in this area, as well as to interact with other program researchers. Send two copies of résumé to: **Lawrence Berkeley Laboratory, One Cyclotron Road, Employment Office 90-1042, Berkeley, CA 94720.** Please specify Job number A/3696. *An Equal Opportunity Employer, M/F/H.*

LAWRENCE BERKELEY LABORATORY

FACULTY POSITIONS IN MOLECULAR GENETICS

The Department of Microbiology and Molecular Genetics at the University of Cincinnati College of Medicine is searching for several individuals to fill tenure-track positions. Applicants should be applying molecular approaches to immunology, microbial pathogenesis, virology, or developmental or oncogene biology. Applicants should submit their curriculum vitae and a summary of research accomplishments and future research plans, along with the names of three scientists willing to write letters of recommendation, to: **Search Committee, Department of Microbiology and Molecular Genetics, University of Cincinnati College of Medicine, Cincinnati, OH 45267-0524. The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer.**

FETAL/NEONATAL PHYSIOLOGIST with 5 to 10 years of independent research experience in chronic recording from fetal and neonatal animals is sought to take leading role in a new respiratory and cardiovascular laboratory. Send résumé and three references by 1 July 1986 to: **Dr. A. C. Bryan, Research Institute, Mount Sinai Hospital, 600 University Avenue, Toronto, Ontario, Canada M5G 1X5. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.**



The University
Corporation
for Atmospheric Research
Seeks Nominations
and Applications for the

DIRECTOR, NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

NCAR is a research laboratory based in Boulder, Colorado and operated by the 55-university consortium UCAR under contract with the National Science Foundation. In concert with the university community, the Center carries out research on fundamental problems in atmospheric and oceanic sciences, and develops and operates major research facilities. NCAR's research includes large-scale dynamics, cloud and mesoscale phenomena, climate, atmospheric chemistry, the sun and interplanetary medium and the interactions between the atmosphere and the oceans, the biosphere, and human activities. Current facilities are in computing, aviation, field observations and global atmospheric measurement techniques.

The Director is the executive and scientific leader of NCAR, and reports to the President of UCAR.

To be considered, candidates must be able to lead on a broad intellectual front, and must possess a significant record of scientific or technical achievement and a demonstrated ability for the successful planning, management and administration of complex research activities.

UCAR intends to fill the position by September 1, 1986. To receive full consideration, applications and nominations should be directed to the address below by April 15. A full job description may be requested from Dr. G. Wm. Curtis at the address below, (inquiries for other information may also be addressed to Dr. Curtis at UCAR (303) 497-8702.

SEND APPLICATIONS AND NOMINATIONS TO:

Dr. Roscoe R. Braham
Chairman,
UCAR Search Committee
C/O Dr. G. Wm. Curtis
UCAR, P.O. Box 3000
Boulder, Colorado 80307

Equal Opportunity/
Affirmative Action Employer

UCAR

University Corporation
for Atmospheric Research

ENZYMOLOGIST/ PROTEIN CHEMIST

• SOUTHERN LOCATION

Ethyl Corporation, a Fortune 500 company with laboratories located in Baton Rouge, Louisiana, is seeking an innovative individual to join our expanding Biotechnology Group. This group has corporate responsibility for investigation and development of novel biological processes for production of industrial products.

The position requires a PhD degree and 1-5 years' postdoctoral or industrial experience, including training in the techniques and applications of industrial enzymology. A sound understanding of organic chemistry and modern analytical methods is essential. Responsibilities will include imaginative research directed toward novel biological processes for new and existing products, development of bench scale processes to demonstrate feasibility, and interaction with engineering staff during scale-up and commercialization. This is an excellent opportunity for a creative individual to contribute to all phases of development of biological processes.

In addition to an excellent opportunity for professional recognition and personal growth, Ethyl offers a comprehensive salary/benefits package and a professional work environment. For confidential consideration, please send detailed resume with salary requirements to:



Mr. Bryan Davis, Recruiting Supervisor

Ethyl Corporation

P.O. Box 14799

Baton Rouge, LA 70898

An Equal Opportunity Employer M/F/H/V

Cell Culture Biologist

We are a research-driven, results-oriented company that is involved in development of pediatric vaccines. Join us and realize first-hand why we have become a pioneer in combatting childhood infectious diseases.

As a Cell Culture Biologist, you will be developing tissue culture assays and coordinating hybridoma production. This position requires an MS in Immunobiology, Cell Biology (or equivalent), at least 2 years of research experience, and preferably a supervisory background.

Our Rochester, N.Y. location ranks high in various quality-of-life surveys. We offer competitive salary and fine professional prospects in a company poised for very substantial growth.

Please send confidential curriculum vitae to: Praxis Biologics, Human Resources Department, 300 East River Road, Rochester, NY 14623.

PRAXIS BIOLOGICS

An equal opportunity employer, m/f.

POSITIONS OPEN

SAN DIEGO STATE UNIVERSITY DEPARTMENTS OF MATHEMATICAL SCIENCES AND BIOLOGY

A position is available for an experienced **ECOSYSTEM MODELER**. The successful candidate will be expected to maintain an active research program including development and direction of, and consulting for, modeling programs in arctic and other natural ecosystems. The successful applicant will join integrated, experimental research and modeling teams in the Systems Ecology Research Group (Walter Oechel, Director), the Ecology Program Area of the Biology Department, and the applied mathematics group of the Mathematical Sciences Department. In addition to maintaining an active research program, responsibilities include teaching courses related to the candidate's area of specialty. The position will begin September 1986. Rank is open. By 2 April 1986, interested candidates should send curriculum vitae, and have at least three letters of recommendation sent to: **Ecosystem Modeler Search Committee, Department of Mathematical Sciences, San Diego State University, San Diego, CA 92182. An Affirmative Action/Equal Opportunity Employer; we do not discriminate against the handicapped.**

ENVIRONMENTAL POLICY AND PLANNING FACULTY POSITION

Demonstrated experience in working with environmental problems and their solutions required and demonstrated strengths in quantitative analysis, including use of computing machinery. Planning work with local communities. Position to teach on a regular basis in master's program in environmental energy studies and undergraduate programs. Ph.D. strongly preferred. Closing date: 5 May 1986. Write for information: **Dean Barbara Smith, The Evergreen State College, Olympia, WA 98505. Equal Opportunity Employer.**

JEFFERSON INSTITUTE OF MOLECULAR MEDICINE FACULTY POSITIONS IN MOLECULAR BIOLOGY AND RELATED AREAS—The newly established Jefferson Institute of Molecular Medicine of the Thomas Jefferson University is seeking scientists to fill 12 tenure-track and senior tenured-faculty positions. Candidates will be selected primarily on the basis of their potential to establish outstanding research programs in general areas of molecular biology, molecular genetics, biochemistry, and related areas. Successful candidates will be provided with competitive salaries, memberships in a graduate program, newly renovated laboratory space, start-up equipment grants, and some continuing support for their research programs. Send curriculum vitae and letters of recommendation to: **Dr. Darwin J. Prockop, Director, Jefferson Institute of Molecular Medicine, Thomas Jefferson University, 11th and Walnut Streets, Philadelphia, PA 19107. Equal Opportunity Employer.**

FACULTY POSITION, DEPARTMENT OF ANATOMY. Anatomy Department has a tenure-track position available at assistant or associate professor Ph.D. or M.D. and minimum of 2 to 3 years of postdoctoral experience. The successful candidate will demonstrate excellence in research and must be currently pursuing an active, funded (National Institutes of Health or National Science Foundation) research program in any area of cellular and/or developmental biology. Teaching responsibilities will include a willingness to participate in gross anatomy taught to medical students and one of the graduate-level courses offered by the department. Salary and seed money are negotiable. Send curriculum vitae, recent reprints/preprints, and three letters of reference:

**Anatomy Search Committee
Department of Anatomy
University of Kansas Medical Center
Kansas City, Kansas 66103**

The University of Kansas Medical Center is an Equal Opportunity/Affirmative Action Employer.

IMMUNOLOGIST, PH.D.: Seeking senior scientist with extensive experience in hybridoma/monoclonal antibody development for use in cancer therapy. Also will require skills in vaccine preparation, lymphokine, and cell-mediated cytotoxicity therapy. Position open in southeast Florida with private medical organization that emphasizes immunotherapeutic approaches to cancer therapy. Please send résumé to: **Box 46, SCIENCE.**

POSITIONS OPEN

EXPERIMENTAL POSTDOCTORAL RESEARCH FELLOWS AND SENIOR RESEARCH FACULTY Gravitational Wave Detection California Institute of Technology

The Caltech research group in experimental gravity has several openings for postdoctoral research fellows, senior research faculty, and senior research staff to participate in the development of techniques related to the detection of gravitational radiation. Current efforts center on the use of long-baseline laser interferometers. In the next few years, construction is expected to begin of multi-kilometer scale detectors designed to carry out searches and observations for gravitational waves in a sensitivity range where waves of astrophysical origin may be expected.

There are diverse opportunities within the group for dedicated experimental physicists and engineers. Experience in lasers and laser optics, servo-systems, instrumentation, large vacuum systems, or high-sensitivity measurement of mechanical motions would be helpful.

Applicants should be interested and take delight in experimental techniques, many of which may be extending the boundaries of current technology in this research.

Applications—including curriculum vitae, publication lists, and three letters of recommendation sent independently—should be sent to: **Professor R. W. P. Drever, C/O: B. Melton, Administrator, Caltech, 130-33, Pasadena, California 91125. Caltech is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.**

FACULTY POSITION: The Department of Biology at Clarkson University invites applications for a tenure-track position. Successful candidates must have a genuine commitment to developing and maintaining a strong, independent research program, as well as teaching at the undergraduate and graduate levels. The area of research is open, but preference will be given to candidates who can interact with existing areas in eukaryotic microbial physiology, protein chemistry, neurobiology, and developmental biology. Clarkson offers competitive salaries, strong start-up support, a balanced teaching-research environment, and the opportunity to be involved in the development of graduate and research programs in a growing department. Send curriculum vitae, a statement of research interests, and the names of at least three references to: **A. E. Linkins, Chairman, Department of Biology, Clarkson University, Potsdam, NY 13676. Deadline for application is 15 April 1986, or until a suitable candidate is found. Clarkson University is an Equal Opportunity Employer.**

LABORATORY—ASSISTANT RESEARCH SCIENTISTS—PATHOLOGY: Recent Ph.D. in molecular biology, immunology, virology, biochemistry, or genetics required. Will work on studies related to histocompatibility genes and leukemia susceptibility. Excellent salary and benefits. Please send résumé to: **Joan Harmon, Personnel Department, NEW YORK UNIVERSITY MEDICAL CENTER, 317 East 34 Street, 7th Floor, New York, NY 10016. An Affirmative Action/Equal Opportunity Employer, M/F.**

University of California, Riverside Department of Nematology

MOLECULAR BIOLOGIST/GENETICIST

Applications are invited for a tenure-track, assistant professor position in the Department of Nematology. The opening is an 11-month, tenure-track appointment in conjunction with the College of Natural and Agricultural Sciences and the Agricultural Experiment Station. The successful candidate will be expected to develop a vigorous research program using contemporary approaches to investigate the molecular mechanisms of parasitism. This position will include limited teaching responsibilities and graduate student supervision. A Ph.D. degree in any of several fields related to molecular genetics is required. The appointment will be effective 1 July 1986, although the position will remain open until a suitable candidate is selected.

Applicants should forward curriculum vitae, statement of research interests, and a list of five references to: **Dr. E. G. Platzer, Department of Nematology, University of California, Riverside, California 92521. The University of California, Riverside, is an Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.**



Postdoctoral Fellowship

Is available for person completing graduate degree program in biochemistry with interest in membrane-associated protein purification and sequencing. Person will work in a molecular virology and experimental hematology laboratory to identify x-ray induced transforming growth factor in cell membrane.

Applicant should send 3 letters of recommendation and CV to: **Joel S. Greenberger, M.D., Chairman, Department of Radiation Oncology.**

University of Massachusetts Medical Center

55 Lake Avenue North
Worcester, MA 01605

An affirmative action/
equal opportunity employer

RESEARCH SCIENTISTS

Positions are available for highly motivated individuals with a background in cell biology at a new Massachusetts based biotechnology company developing artificial internal organs which incorporate living cells. Current emphasis is on diabetes research with pancreatic islets and beta cells.

SENIOR SCIENTISTS

PhD or MD with a minimum of 2 years' postdoctoral research experience with mammalian cell systems. Familiarity with organ perfusion, transplantation, diabetes research desirable.

LABORATORY MANAGER

PhD or MD with strong publication record; minimum 4 years' postdoctoral experience with mammalian cell culture. Must possess managerial abilities. Familiarity with islet research desirable.

Submit resume, salary history and requirements, and names of three references to: **Box 52, SCIENCE.**

E.O.E. M/F/H/V.



DIRECTOR Marine Science Programs

Rutgers, The State University of New Jersey, and the New Jersey Marine Sciences Consortium jointly seek a marine science executive to fill the exceptionally responsible dual position of Director of the Fisheries and Aquaculture Technology Extension Center and Vice President of the Consortium newly established at Rutgers by the New Jersey Commission on Science and Technology. The successful candidate will:

- (1) Serve as principal deputy to the President of the New Jersey Marine Sciences Consortium in the direction of the programs in marine research, education and extension of an alliance of 29 colleges and universities in the New York, New Jersey, and Pennsylvania area;
- (2) Direct programs in research and technology transfer of the Fisheries and Aquaculture Technology Extension Center;
- (3) Serve as the Sea Grant Director for the State of New Jersey;
- (4) Recruit and supervise staff to assist in the administration of each of the above functions;
- (5) Operate and coordinate the two annual programs of research awards to members of the faculties of the participating institutions under the objectives set for them respectively by the Sea Grant Program and the New Jersey Commission on Science and Technology.

The Director/Vice President will be responsible for liaison with academia, state and federal agencies and industry in New Jersey and surrounding areas; he/she will have comprehensive responsibility in the design, coordination, execution and control of projects in all dimensions of marine and coastal science and technology to serve regional and national needs. He/she will report concurrently to the President of the Consortium and the Executive Director of the New Jersey Agricultural Experiment Station of Rutgers.

Salary is open and competitive at the highest national level. An appropriately qualified individual will receive faculty appointment at Rutgers. We seek an accomplished scientist with demonstrated executive ability.

Applications and nominations must be received by April 15, 1986 to receive full consideration. Please direct all correspondence to:

Dr. Edward Goldberg
Search Committee Chairman
Assistant Chancellor
Department of Higher Education
c/o Office of the Vice President for
University Administration and Personnel

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS

RUTGERS
The State University
Old Queen's Building
New Brunswick, New Jersey 08903

An Affirmative Action/Equal Opportunity Employer

MANAGER, PROCESS PURIFICATION. The Invitron Corporation is a company committed to the large-scale production of cell culture-derived proteins of pharmaceutical importance. Due to rapid expansion, a challenging position exists for a Manager of Process Purification in our highly sophisticated manufacturing facility located in the St. Louis area. The person will lead a group of skilled purification specialists and assume responsibility for a variety of process purification methods in a full GMP environment. An ability to organize and maintain an aggressive production schedule is required, including the preparation and implementation of master production records and other documentation critical to a pharmaceutical manufacturing process. The position requires a strong coordination of efforts with various other groups including cell culture, quality control, regulatory affairs, and research.

The successful candidate will have an M.S. or Ph.D. in Biochemistry, 3-5 years experience in process purification in a GMP environment; and have a strong working knowledge of purification and characterization of proteins. A knowledge of process automation is a plus.

Salary and position level commensurate with experience and education. We offer an excellent benefit and relocation package and an opportunity for professional growth. Qualified candidates should submit a detailed resume, demonstrating a strong record of productivity in the area of process purification, as well as salary history to:

Invitron Corporation
Attn: Human Resources
8000 Maryland Avenue
Suite 860
Clayton, MO 63105

NEUROCHEMIST/ BIOCHEMICAL PHARMACOLOGIST

The Merrell Dow Research Institute has a challenging career opportunity for a Neurochemist/Biochemical Pharmacologist to join our growing CNS research team.

The successful candidate would join a multidisciplinary team involved in both basic research and drug discovery programs directed toward the identification of new therapeutic approaches to affective and psychotic disorders as well as other neurochemical functional diseases.

Qualified applicants should have a PhD in biochemistry/molecular pharmacology with 1-3 years post-doctoral experience in a neuroscience related area. Practical experience in receptor and second messengers assays and familiarity with state-of-the-art neurochemical techniques in enzymology and HPLC analysis are desirable.

We offer excellent compensation, comprehensive benefits and relocation assistance. Please send your curriculum vitae and names of three references in confidence to:

Personnel Services Manager

Merrell Dow

**MERRELL DOW
RESEARCH INSTITUTE**
2110 East Galbraith Road
Cincinnati, OH 45215
U.S. Citizenship or
Permanent Visa Required
Equal Opportunity Employer M/F/H/V

POSITIONS OPEN

CELLULAR OR DEVELOPMENTAL MOLECULAR BIOLOGIST HEAD OF DEPARTMENT OF ANATOMICAL SCIENCES

The University of Illinois at Urbana-Champaign is committed to the development of strong programs of molecular approach in several areas of the biological sciences. We are currently seeking an active investigator interested in expanding a program of research in cellular or developmental molecular biology within the Department of Anatomical Sciences in the School of Life Sciences. It is anticipated that this individual will maintain a vigorous research program and will have the opportunity to expand the department significantly in the area of cellular or developmental molecular biology. Applicants must possess a Ph.D., M.D. or equivalent academic degree, and have qualifications appropriate to a tenured appointment at the full professor level. The position is available immediately with starting date negotiable. Salary is open and will be commensurate with qualifications. Applicants should send their curriculum vitae to:

M. E. Reichmann
University of Illinois
393 Morrill Hall
505 South Goodwin Avenue
Urbana, IL 61801
Telephone: 217-333-3044

Applications should be received by 15 May for full consideration. *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

HEAD, DEPARTMENT OF VETERINARY SCIENCE. Nominations and applications are invited for this position in the College of Agriculture, The Pennsylvania State University. The department head is responsible for directing the teaching, research, diagnostic, and extension programs of an academic department that consists of 19 full-time faculty members, 5 professionals with fixed term appointments and 14 graduate students. The department shares responsibility for advising approximately 250 undergraduate students in animal bioscience. Candidates must have a doctoral degree, preferably in veterinary medicine, and demonstrated teaching, research, and administrative abilities. Inquiries, nominations, and applications should be directed to: **Dr. R. J. Eberhart, Chairman, Search Committee, 101B Henning Building, Pennsylvania State University, University Park, PA 16802.** Applications will be accepted until 15 May 1986, or until the position is filled. *The Pennsylvania State University is an Equal Opportunity/Affirmative Action Employer.*

MATHEMATICAL GEOSCIENTIST WRIGHT STATE UNIVERSITY

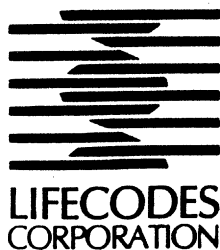
The Department of Geological Sciences invites applications for a tenure-track position at the level of **assistant or associate professor** from individuals with primary expertise within the broad field of quantitative geology. The individual should have a strong mathematical and computer background and an interest in the application of numerical modeling to geophysical and/or geohydrological problems. The individual should also anticipate the development of courses dealing with the application of mathematics and mathematical modeling to geoscience problems. The applicant's specific field of research interest is open; however, he or she would be welcome to participate in current research programs. The position will be available September 1986 and will be filled as soon as possible after that date. Candidates are expected to have completed all requirements for the Ph.D. at the time of initial employment.

The department currently has 12 full-time faculty and strong M.S. program in geology, with concentration on exploration geophysics and applied geohydrology. Departmental computer facilities, analytical instrumentation, and field equipment to support research are outstanding. The new position is funded by an academic challenge grant that recognizes the excellence of our graduate program.

Send résumé and three letters of reference to: **Dr. Byron Kulander, Chairman, Search Committee, Department of Geological Sciences, 260 Brehm Laboratory, Wright State University, Dayton, Ohio 45435.**

Closing date for applications is 7 May 1986. *Wright State University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN



MOLECULAR BIOLOGIST

Lifecodes Corporation, a rapidly growing biotechnology company, is seeking a research scientist to join a multidisciplinary team applying recombinant DNA technology to medical diagnostics. Qualified applicants will have a recent Ph.D. in one of the biological sciences and should have experience with a wide range of recombinant DNA techniques.

Lifecodes Corporation is located in Westchester, New York, only 30 minutes from midtown Manhattan.

To apply, send your curriculum vitae along with the names, and telephone numbers of three references to:

Dr. Jeffrey Glassberg
Personnel Department
Lifecodes Corporation
4 Westchester Plaza
Elmsford, New York 10523

TEMPLE UNIVERSITY DEPARTMENT OF BIOLOGY MUSCULAR BIOLOGY—GENETICS

The Department of Biology is expanding its program in molecular biology and genetics. We invite applications for a tenure-track academic appointment at the assistant professor level to begin either 1 July 1986 or 1 January 1987. The successful candidate will also hold an appointment in the University's Institute of Molecular Biology and Genetics. Preference will be given to applicants whose research programs are in immunology, developmental biology, cell biology, or neurobiology. The appointee is expected to maintain an independent research program and to contribute to graduate and undergraduate education and training in his/her area of specialization. All candidates are expected to have postdoctoral experience. Applicants should send curriculum vitae, representative publications, a summary of their previous and proposed research, and the names and addresses of three references to:

Dr. Nina W. Hillman
Department of Biology 015-00
Temple University
Philadelphia, PA 19122

Closing Date: 31 May 1986. Applications will be reviewed upon receipt. *Temple University is an Equal Opportunity/Affirmative Action Employer.*

PHYSIOLOGY AND BIOPHYSICS FACULTY POSITIONS

The Department of Physiology and Biophysics at State University of New York (SUNY) Stony Brook will have two tenure-track positions to fill during the 1986 to 1987 academic year at the level of assistant professor. Candidates with interests in the application of molecular genetics and/or biophysical techniques to study membrane, protein, or nucleic acid structure function relationships with emphasis on hormonal regulation and transmembrane signaling, are particularly encouraged to apply, although outstanding candidates in all areas of molecular physiology and physical biochemistry will be given serious consideration. Responsibilities include primarily the development of a strong, independent research program, as well as participation in the teaching program. Applicants should submit curriculum vitae with a summary of present and future research interests, and request that three letters of recommendation be sent. This material should be sent to: **Dr. Simon J. Pilakis, Department of Physiology and Biophysics, School of Medicine, Health Science Center, SUNY Stony Brook, Stony Brook, NY 11794-8661.** A Ph.D. in either physiology and biophysics, molecular biology, biochemistry, or in a related field is required. *SUNY Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer.*

POSITIONS OPEN

NEURORECEPTOR BIOCHEMISTRY position available immediately at research associate or possibly higher level for studies on structural chemistry characterization of the isolated GABA receptor. Position funded through June 1988. Salary competitive and dependent on experience. Contact: **Dr. L. Wingard, Department of Pharmacology, School of Medicine, University of Pittsburgh, PA 15261** (send curriculum vitae and names of three references) **telephone: 412-624-2547**, by 15 April 1986. *Equal Opportunity/Affirmative Action Employer.*

PEPTIDE AND PROTEIN RESEARCH. Positions available immediately for Ph.D. with background in one of these three areas: biochemistry (purification, enzyme kinetics), synthesis (solid-phase peptide synthesis), and immunology (monoclonal antibodies and assays) in our program on oncogene-product research. Send résumé to: **Dr. James Tam, Box 294, Rockefeller University, 1230 York Avenue, New York, NY 10021.** *Equal Employment Opportunity/Affirmative Action Employer.*



PHARMACOLOGIST/BIOCHEMIST

Nova Pharmaceutical Corporation, a company dedicated to the discovery of novel therapeutic and diagnostic products using the most current techniques, has an immediate opening for a pharmacologist/biochemist with 0 to 2 years of postdoctoral experience. The ideal candidate would be familiar with receptor-mediated mechanisms of autonomic pharmacology. Experience with in vitro enzyme, receptor binding, and bioassay techniques used for studying the release and actions of allergic mediators would be especially desirable. Additional experience in in vivo techniques for measuring pulmonary functions is very helpful.

Nova occupies new facilities at the Francis Scott Key Medical Center in Baltimore, and has strong intracampus links with The Johns Hopkins University, National Institute for Drug Abuse, and National Institute of Aging. Nova has a full complement of chemical, biochemical, and pharmacological support personnel.

Nova offers competitive salaries and an excellent benefits package. For further information, please enclose a current résumé with salary requirements to:

Mrs. Lydia K. Battaglia
NOVA PHARMACEUTICAL CORPORATION
5210 Eastern Avenue
Baltimore, Maryland 21224-2788
An Equal Opportunity/Affirmative Action Employer

PHYSICS AND ASTRONOMY—Two tenure-track faculty positions available, one at the assistant professor level, the other at the associate professor level. Positions are open to experimental physicists with Ph.D. Responsibilities include involving undergraduate students in laboratory projects and research and combining undergraduate teaching with research. A grant of \$47,000 has been awarded for development of advanced undergraduate laboratory for lasers, optics, and electro-optics through NSF. Send letter of application, résumé, and names of three references to: **Office of Academic Affairs, Physics and Astronomy Search, Western Kentucky University, Bowling Green, KY 42101.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL—RESEARCH ASSISTANT PROFESSOR to study the biochemistry and differentiation of the skeletal muscle outer membrane and myogenic lineage using monoclonal antibodies and recombinant DNA. Teaching to include delivery of immunology laboratories to first-year medical students. Experience in immunology, membrane biochemistry, and recombinant DNA preferred. Initial appointment for 1 year, but with potential for long-term appointment; to start summer-fall 1986, salary based on experience. Send curriculum vitae and names of three references before 1 May 1986 to: **Dr. Stephen Kaufman, University of Illinois, College of Medicine, Department of Microbiology, 131 Burrill Hall, 407 South Goodwin, Urbana, Illinois 61801; telephone: 217-333-3521.** *University of Illinois is Affirmative Action/Equal Employment Employer.*

**NATIONAL INSTITUTES OF HEALTH
PUBLIC HEALTH SERVICE
DEPARTMENT OF HEALTH AND HUMAN SERVICES**

Opening Date: March 1, 1986 / Closing Date: March 31, 1986
(All applications must be postmarked before closing date)

**DIRECTOR, NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND
KIDNEY DISEASES**

The National Institutes of Health invites nominations and applications for the position of Director, National Institute of Diabetes and Digestive and Kidney Diseases, (NIDDK). This Institute conducts, fosters, and supports research and research training on the prevention, management, and cure of diabetes and related endocrine and metabolic diseases; kidney, urologic and blood diseases; and digestive diseases. Programs encompass intramural laboratory research and extramural (grants and contracts) activities in fundamental diabetes, digestive and kidney disorders.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$61,296 to \$68,700 per annum depending on qualifications. Candidates may be eligible for Physicians Comparability Pay up to \$10,000 per year. Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

The mandatory qualifications are: (1) meet the minimum educational requirements for Medical Officer, GS-602, or Health Scientist, GS-601, or equivalent combination of experience and training, which demonstrates a broad knowledge and understanding of major public health problems; and (2) have research experience and knowledge of research programs in one or more areas related to diabetes, digestive and kidney disorders. In addition, candidates must meet the following managerial/executive qualifications: experience in the leadership/management of a basic or clinical research program, demonstrating competence to assume leadership responsibilities in: (1) assuring that national and agency goals and priorities are considered in carrying out

the functions and responsibilities of the organization; (2) establishing and maintaining relationships with key individuals and groups outside the organization; (3) directing and guiding programs and projects, including long-term and short-term planning and establishing objectives and priorities; (4) establishing procedures for the development and defense of the organization's budget, and allocating fiscal and personnel resources to support program implementation; (5) developing processes and overseeing activities to assure the fair and equitable employment of qualified persons, and implementing EEO/Affirmative Action objectives; (6) developing and implementing procedures for monitoring program performances, including periodic analysis and evaluation.

Candidates who meet the mandatory requirements will be further evaluated by the Search Committee on the following factors: additional managerial/executive qualifications; scientific reputation/peer recognition; training and education; honors and awards; and communications and interpersonal skills.

Applications (Personal Qualifications Statement, SF-171) are to be sent to Helen C. Stafford, Executive Secretary, Search Committee for Director, NIDDK, National Institutes of Health, Building 1, Room 19, Bethesda, Maryland 20892. For further information, contact her on (301) 496-4197. A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER.

**NATIONAL INSTITUTES OF HEALTH
PUBLIC HEALTH SERVICE
DEPARTMENT OF HEALTH AND HUMAN SERVICES**

Opening Date: March 1, 1986 / Closing Date: March 31, 1986
(All applications must be postmarked before closing date)

**DIRECTOR, NATIONAL INSTITUTE OF ARTHRITIS AND MUSCULOSKELETAL
AND SKIN DISEASES**

The National Institutes of Health invites nominations and applications for the position of Director, National Institute of Arthritis and Musculoskeletal and Skin Diseases, (NIAMS). This Institute conducts, fosters, and supports research and research training on the prevention, management, and cure of arthritis, musculoskeletal and skin diseases. Programs encompass intramural laboratory research and extramural (grants and contracts) activities in fundamental arthritis and musculoskeletal and skin diseases.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$61,296 to \$68,700 per annum depending on qualifications. Candidates may be eligible for Physicians Comparability Pay up to \$10,000 per year. Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

The mandatory qualifications are: (1) meet the minimum educational requirements for Medical Officer, GS-602, or Health Scientist, GS-601, or equivalent combination of experience and training, which demonstrates a broad knowledge and understanding of major public health problems; and (2) have research experience and knowledge related to arthritis, musculoskeletal and skin disorders. In addition, candidates must meet the following managerial/executive qualifications: experience in the leadership/management of a basic or clinical research program, demonstrating competence to assume leadership responsibilities in: (1) assuring the national and agency goals and priorities are considered in carrying out

the functions and responsibilities of the organization; (2) establishing and maintaining relationships with key individuals and groups outside the organization; (3) directing and guiding programs and projects, including long-term and short-term planning and establishing objectives and priorities; (4) establishing procedures for the development and defense of the organization's budget, and allocating fiscal and personnel resources to support program implementation; (5) developing processes and overseeing activities to assure the fair and equitable employment of qualified persons, and implementing EEO/Affirmative Action objectives; (6) developing and implementing procedures for monitoring program performances, including periodic analysis and evaluation.

Candidates who meet the mandatory requirements will be further evaluated by the Search Committee on the following factors: additional managerial/executive qualifications; scientific reputation/peer recognition; training and education; honors and awards; and communications and interpersonal skills.

Applications (Personal Qualifications Statement, SF-171) are to be sent to Helen C. Stafford, Executive Secretary, Search Committee for Director, NIAMS, National Institutes of Health, Building 1, Room 19, Bethesda, Maryland 20892. For further information, contact her on (301) 496-4197. A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

PHYSICAL OCEANOGRAPHER: Search Extended. Old Dominion University's Department of Oceanography invites applications for a tenure-track faculty position in physical oceanography available fall 1986. Rank and salary will be commensurate with qualifications. Applicants must have an earned doctorate and a history of successful research efforts. Candidates should have an established record in physical oceanographic research; preferably with interest in theoretical aspects. The successful applicant is expected to continue sponsored research, supervise graduate students, and teach courses. Physical oceanography has been singled out by the university for special emphasis and we anticipate further growth in the area. Send résumé, names of three references, and a brief description of research interests by 21 April 1986 to: **Dr. Larry P. Atkinson, Physical Oceanography Search Committee, Department of Oceanography, Old Dominion University, Norfolk, VA 23508. Telephone: 804-440-4285. Old Dominion University, a state-supported institution, is an Affirmative Action/Equal Opportunity Institution.**

BABSON COLLEGE

PHYSICAL SCIENTIST—A tenure-track position teaching science as part of a business management program. An individual with knowledge of cognitive development and Piagetian principles and their applications in innovative course design and methodology would complement our existing expertise. Qualifications: Ph.D. and expertise in physical sciences. Business/industrial experience would be helpful. Lecture and laboratory teaching experience is desirable.

SCIENCE PROGRAM COORDINATOR—A tenure-track senior position with responsibility for the development, implementation, and coordination of innovative science courses for students enrolled in a business management program. Qualifications: Ph.D. in science with at least 5 years of teaching experience at the undergraduate level. Evidence of broad-based creative curriculum development necessary. Some business experience involving the management of technology is desirable.

Babson's science program emphasizes the generation, selection, analysis, and utilization of empirical knowledge as applied to the business world and society. Both individuals will work creatively with non-science liberal arts and management faculty in providing our students with a broad-based integrated learning experience. These individuals will join a small group of science faculty committed to preparing undergraduate business majors for their careers as managers in the 21st century. Positions start September 1986. Applicants should submit curriculum vitae, a statement of teaching interests, and names of three references to: **Dr. J. Saber, Chair, Search Committee, Math/Science Division, Babson College, Wellesley, MA 02157. Babson College is an Equal Opportunity/Affirmative Action Employer.**

PHYSIOLOGIST/PHARMACOLOGIST—The Department of Physiology and Pharmacology of The University of South Dakota invites applications for a tenure-track position as assistant professor. A Ph.D. and/or M.D. degree and a minimum of 2 years' postdoctoral experience are required. Preference will be given to candidates with experience in autonomic-cardiovascular pharmacology, although candidates with expertise in other areas will be considered. Selection will be based on scientific credentials and the potential to establish an outstanding, independent research program. Excellence in teaching is expected. Senior candidates with outstanding credentials may apply for a higher level appointment. Applicants should arrange to have their curriculum vitae and names of three references and a statement of research interests sent to: **Chairman, Department of Physiology and Pharmacology, The University of South Dakota, School of Medicine, Vermillion, SD 57069. Closing date for applications is 15 May 1986, or until position is filled. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION to study the biochemical regulation and interactions of the *c-src* proto-oncogene product in mammalian cells. Experience in protein molecular biology desirable. Submit résumé and three references to: **Dr. David Shalloway, Department of Molecular and Cell Biology, Pennsylvania State University, Room 406 South Frear, University Park, PA 16802. Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

PLANT PHYSIOLOGIST

The Department of Botany and Plant Sciences, University of California, Riverside, is searching for a plant physiologist with a research interest in translocation and partitioning of photosynthate at the plant level. The position will be filled as an 11-month, tenure-track appointment at the assistant professor level, on or after 1 July 1986.

QUALIFICATIONS: Applicants must have a Ph.D. in plant physiology or related field. Candidates with postdoctoral experience are preferred. We are searching for the most qualified individual who will establish a strong, unique research program.

RESPONSIBILITIES: The applicant must have a commitment to the basic and applied studies of photosynthate translocation with the objective of improving the efficiency of crop plants in arid and/or saline regions. While the position will involve primarily research, some undergraduate and graduate teaching, including directing students in our graduate programs, will be required.

APPLICATION: Send relevant information, including curriculum vitae, transcripts, and a statement of research interest, and have at least three confidential letters of recommendation sent to: **Dr. R. L. Heath, Search Committee Chairman, Department of Botany and Plant Sciences, University of California, Riverside, CA 92521.**

APPLICATION DEADLINE: 30 April 1986, or later if a suitable candidate has not been selected.

The University of California, Riverside is an Affirmative Action/Equal Opportunity Employer. Minorities and women are encouraged to apply.

POSTDOCTORAL FELLOW RESEARCH SCIENTIST

Two positions are available in the Regional Bone Center to work on bone cell biology using in vitro models. Experience in cell culture preferred. Salary: \$19,000 to \$30,000 per annum, depending on qualifications. Apply to: **Dr. D. W. Dempster or Dr. R. Lindsay, Regional Bone Center, New York State Department of Health (NYSDH), Helen Hayes Hospital, Route 9W, West Haverstraw, New York 10993. The NYSDH is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available to isolate, identify, and cultivate fungi to be screened for potential anticancer agents. A Ph.D. in botany, biology, or microbiology. Experience in fungal isolation from specialized ecological niches, and expertise in one of the major fungal groups is required. Send résumé to:

**Dr. J. M. Schmidt
Assistant Director
Cancer Research Institute
Arizona State University
Tempe, AZ 85287**

Deadline: 15 May 1986.

Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS IN CANCER RESEARCH. Successful candidates will join an interdisciplinary research program emphasizing mechanisms of carcinogenesis by radiation, chemicals, and retroviruses and related areas such as molecular genetics, DNA repair, membranes, tumor immunology, and regulation of gene expression. Beginning salary is \$22,000; U.S. citizenship or permanent residency is required. Persons soon to be awarded or holding recent Ph.D., M.D., or D.V.M. degrees are invited to write for information to: **Training Office, University of Tennessee—Oak Ridge Graduate School of Biomedical Sciences, Biology Division, P.O. Box Y, Oak Ridge National Laboratory, Oak Ridge, TN 37831. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL ASSOCIATE AND PREDOCTORAL POSITIONS: To study mutagenicity and repair of chemical carcinogen-induced DNA damage in bacterial system and cultured mammalian cells at gene and sequence level. Biochemistry and molecular genetics background needed. Send curriculum vitae and references to: **Dr. Moon-Shong Tang, University of Texas System Cancer Center, Science Park—Research Division, P.O. Box 389, Smithville, TX 78957. Telephone: 512-237-2403. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE (with potential for further advancement) in molecular biology, experience with in situ hybridization for DNA sequences desirable. To work in a productive, funded laboratory at Harvard Medical School, investigating interactions of gastrointestinal regulatory peptides. Salary commensurate with qualifications and experience. Send curriculum vitae and names of three references to: **Dr. Michael Wolfe, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL FELLOW

Postdoctoral position available for up to 3 years, starting June 1986. Areas of investigation emphasize Ca^{2+} and calmodulin regulation of neuronal and secretory functions, particularly use of domain-specific calcineurin antibodies to define its function in brain and cultured cell lines. Please send curriculum vitae and references to: **Dr. Donald J. Wolff, Department of Pharmacology, University of Medicine and Dentistry of New Jersey—Rutgers Medical School, P.O. Box 101, Piscataway, NJ 08854. An Equal Opportunity/Affirmative Action Employer, M/F/H/V.**

POSTDOCTORAL POSITION available immediately in **NEUROIMMUNOLOGY**. We are defining the molecular bases of the immune response to neural antigens, with particular reference to the modulation and function of the major histocompatibility complex. The approach is multidisciplinary. Experience in immunocytochemistry, neuroanatomy, or developmental biology is desirable. Send résumé and names of references to: **Dr. Lois Lampson, Department of Anatomy, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-6058. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available in the fall of 1986 to investigate mutants of cultured cells with temperature-sensitive defects in endocytic function. A variety of mutants have been isolated and are available for analysis. Experience in one or more of the following areas is important: somatic cell genetics, endocytosis, protein toxins, and electron microscopy. Send curriculum vitae (indication of sex and ethnicity for Affirmative Action statistical purposes is requested but not required) and the name, addresses, and telephone numbers of three references to:

**Dr. Rockford K. Draper
Biology Programs
The University of Texas at Dallas
P.O. Box 830688
Richardson, Texas 75083-0688**

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

POSTDOCTORAL POSITION Department of Microbiology and Molecular Genetics University of California, Irvine (UCI)

Two positions are available in the laboratory of **Dr. G. Wesley Hatfield** for independent research in one of the following areas:

- 1) The molecular mechanisms of attenuation of gene expression in bacterial systems.
- 2) The roles of tRNA isoacceptors in coding context using bacterial attenuators as model systems.
- 3) The molecular genetics and biochemistry of protein-DNA interactions involved in activation of gene expression.
- 4) The application of molecular genetics to the production of primary and secondary metabolites by microorganisms of industrial importance.

The position affords an excellent opportunity for further training and career advancement in a stimulating, well-funded, scientific environment. UCI is located in a desirable coastal area of Southern California. Send curriculum vitae to:

**Dr. G. Wesley Hatfield
Department of Microbiology and Molecular Genetics
College of Medicine
University of California
Irvine, CA 92717**

An Affirmative Action Equal Opportunity Employer

Scientists

The Bristol-Myers Pharmaceutical Research and Development Division has the following career opportunities available in cancer research for individuals who excel in the technical and scientific aspects of anticancer drug evaluation and development. These positions will start in the spring of 1986 at our new state-of-the-art research facility in Wallingford, Connecticut.

IN VIVO DRUG SCREENING & EVALUATION

Successful candidates will be responsible for the design, testing and initial interpretation of *in vivo* studies using murine tumor and human tumor xenograft models. Positions require a PhD in an aspect of tumor biology and extensive exposure to all facets of *in vivo* antitumor drug testing or a BS/MS with 3-6 years experience in tumor biology or related area. Demonstrated familiarity with aseptic techniques, *in vivo* tumor propagation, parenteral drug administration to mice in addition to good communication, analytical and supervisory skills essential. Experience with computers and nude mice desirable.

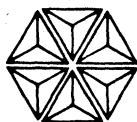
IN VITRO DRUG SCREENING & EVALUATION

Successful candidate will perform *in vitro* cytotoxicity evaluations of new antitumor agents to include study design, maintenance of human cell lines and initial interpretation of results. Position requires a BS/MS degree, 3+ years experience in cell culture with emphasis on *in vitro* cytotoxicity testing, the ability to design and analyze *in vitro* experiments, as well as good working knowledge of cell biology and state-of-the-art *in vitro* assay technology. Experience with computerized systems desirable.

POST DOCTORAL APPOINTMENT

Selected candidate for this one-year appointment will have an opportunity to participate in the development of new *in vivo* human tumor xenograft models in nude mice and antitumor evaluation of monoclonal antibody-drug conjugates. Requires a PhD with interest and experience in the aforementioned areas plus demonstrated ability to design, implement and analyze experiments relevant to this research effort. Ability to design and evaluate new tumor models and techniques to be applied to drug-targeting research desirable.

We offer a competitive compensation package and a comprehensive benefit program. Interested candidates should submit a resume indicating area of interest, salary history and requirement, to: SENIOR PERSONNEL REPRESENTATIVE



**BRISTOL-MYERS COMPANY
RESEARCH AND
DEVELOPMENT DIVISION**

P.O. Box 4755, Syracuse, New York 13221

An equal opportunity employer M/F

SCIENTISTS PROTEIN CHEMISTRY AND PROTEIN PURIFICATION

Biogen is a biotechnology company with laboratories in the United States and Switzerland, developing commercial applications of molecular biology in the areas of agriculture, chemicals, pharmaceuticals and energy. We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment.

Candidates should have expertise in the following areas:

- enzymology
- protein structural chemistry
- peptide chemistry

Positions are available at the Ph.D. level. Masters degree recipients who have considerable experience in these technical areas are also encouraged to apply.

Biogen offers an attractive compensation and benefits package. Please send your resume and references to: Manager of Human Resources, Biogen, Dept. PC-PRP, 14 Cambridge Center, Cambridge, MA 02142. An equal opportunity employer.

BIOGEN

TUMOR-BIOLOGY/ PHARMACOLOGY

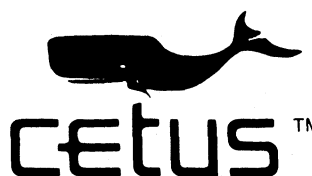
Cetus Corporation has an opening in a growing preclinical investigations group for an individual with training and experience in *in vivo* and *in vitro* aspects of anti-cancer therapeutics.

Responsibilities include participation in on-going evaluation of new biotechnology-based health care products, and development of an appropriate research program. Candidates should have 2-5 years' post-doctoral experience in a relevant field, and documented evidence of innovative research accomplishments.

Please send resume in confidence to:

**Cetus Corporation
Box JWS
1400 Fifty-third Street
Emeryville, CA 94608**

EOE



POSITIONS OPEN

POSTDOCTORAL FELLOW RESEARCH ASSOCIATE

University of Pennsylvania School of Medicine
Department of Human Genetics

Position available immediately to work on insulin control of growth-related gene expression in hepatocytes; insulin receptor gene expression, regulation of expression of oncogenes in specific tumor cells. Requires experience with a variety of molecular biologic techniques. Up to 3 years' salary guaranteed. Send curriculum vitae and names of three references to:

Dr. Rebecca A. Taub
Department of Human Genetics
University of Pennsylvania School of Medicine
Philadelphia, Pennsylvania 19104

POSTDOCTORAL POSITION

Starting May 1986 to study mechanism of DNA transposition. Background in protein chemistry desirable. Salary range \$16,000 to \$20,000. Send résumé and references to: Dr. R. Harshey, Research Institute of Scripps Clinic, Department of Molecular Biology, La Jolla, CA 92037.

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

POSTDOCTORAL POSITION

Postdoctoral position in developmental and molecular biology. Two ongoing projects are the isolation and cloning of mRNA binding protein cDNAs [MCB 5, 2697 (1985)] and the determination of nuclear targeting signals of adenovirus EIA [PNAS 82, 8434 (1985)]. Send curriculum vitae and names and telephone numbers of three references to: Dr. Joel Richter, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.

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

POSTDOCTORAL POSITION available in a recently expanded department emphasizing cell biology. The successful candidate will study the role of a particular glycosylation event in intracellular trafficking of newly synthesized glycoproteins, especially in neural tissues, utilizing biochemical and immunolocalization techniques. Send curriculum vitae and names of three references to: Dr. Richard B. Marchase, Department of Cell Biology and Anatomy, University of Alabama at Birmingham, Birmingham, AL 35294.

POSTDOCTORAL POSITION IN MOLECULAR BIOLOGY—The Center for Neurologic Diseases of the Neurology Division of the Brigham and Women's Hospital has an immediate opening for a molecular biologist to study immunologic diseases of the nervous system. Preference will be given to applicants with a background in the molecular biology of the immune system. Send curriculum vitae and names of three references to: Dr. Howard Weiner, Co-Director, Center for Neurologic Diseases, BSRB-12, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115. *The Brigham and Women's Hospital and Harvard Medical School are Equal Opportunity Employers.*

POSTDOCTORAL—MOLECULAR IMMUNOLOGY

Postdoctoral position starting summer 1986 in immunogenetics laboratory emphasizing analysis of the human MHC. Background and interest in molecular biology/immunology essential. Send curriculum vitae and summary of research interests to: Dr. Gerald T. Nepom, Immunology Research Program, Virginia Mason Research Center, 1000 Seneca Street, Seattle, WA 98101.

QUALITY ASSURANCE MANAGER to research and develop improved specialty food products, to test new methods and systems for food processing, to apply engineering principles of fluid flow characteristics for viscosity control for additives and stabilizers, and to maintain quality control to meet requirements set by the U.S. Department of Agriculture and/or Food and Drug Administration. Require M.S. in food science with 2 years of experience or Ph.D. in food science in lieu of M.S. degree and experience. Salary: \$27,976.00 per year. Apply with résumé to: Georgia Department of Labor, 710 East First Street, Rome, Georgia 30162. Control Number GA 5128477.

POSITIONS OPEN

POSTDOCTORAL POSITION—Two postdoctoral positions in radiation and hyperthermia biology available immediately. Research concerns the action of radiation and/or hyperthermia on mammalian cells with emphasis on cellular and DNA repair processes, cell cycle progression, and thermotolerance. Permanent residency and experience with cell culture techniques required. Experience in DNA repair techniques and/or flow cytometry preferred. Send curriculum vitae, important reprints, research interests, and three letters of recommendation to: GEORGE ILIAKIS, Ph.D., or DENNIS B. LEEPER, Ph.D., Laboratory of Experimental Radiation Oncology, Department of Radiation Therapy and Nuclear Medicine, THOMAS JEFFERSON UNIVERSITY HOSPITAL, 11th and Walnut Streets, Philadelphia, PA 19107. *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION

Postdoctoral position available immediately to study the control of mammalian sperm motility during maturation and capacitation. Previous experience studying flagellar movement, protein phosphorylation and other aspects of protein biochemistry, and/or reproductive biology desirable. Send curriculum vitae and names of three references to: Dr. George Witman, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITIONS MOLECULAR BIOLOGY

The Department of Obstetrics and Gynecology, Division of Gynecologic Oncology, has immediate openings to study the molecular biology of papillomaviruses. Experience in recombinant DNA techniques is required.

Interested applicants should send curriculum vitae and three letters of reference to:

Wayne D. Lancaster, Ph.D.
Vincent T. Lombardi Cancer Research Center
Georgetown University Medical Center
Department of Obstetrics and Gynecology
3800 Reservoir Road, NW
Washington, DC 20007

Georgetown University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITIONS IN NUTRITIONAL SCIENCES

The University of Illinois at Urbana-Champaign offers a unique, multidisciplinary traineeship involving collaboration with two faculty members in the Division of Nutritional Sciences. Independent research projects will be developed in fundamental and applied nutrition of animals and humans. Potential research areas include nutrient metabolism throughout life, nutrition in health and disease, and the influence of food preferences and food processing on nutritional quality of diets. Exceptional individuals with a M.D. or Ph.D. in nutrition or an allied field are encouraged to apply. Duration is 2 years, with stipend of \$18,000 per year. Completed applications must be received by 11 April 1986 to receive full consideration. *University of Illinois is an Equal Opportunity/Affirmative Action Employer.* For further information and application contact: Dr. John A. Milner, Director, Division of Nutritional Sciences, 451 Bevier Hall, 905 South Goodwin Avenue, Urbana, Illinois 61801.

RESEARCH ASSOCIATE

Applications are invited for a research associate position that involves the development of positron-emitting long chain fatty acids as noninvasive probes of myocardial metabolism. Overall program involves organic synthesis, radiochemical synthesis, perfusion of isolated rat hearts, biochemical/pharmacological investigation of metabolism, acquisition of tissue radioactivity-time curves with external scintillation detectors, and compartmental analysis and physiological modeling. Ph.D.'s with expertise or interest in two or more of these aspects are invited to submit résumés to:

John Gatley, Ph.D.
Department of Radiology/FMI Box 433
The University of Chicago
5841 South Maryland Avenue
Chicago, Illinois 60637

Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

POSTDOCTORAL POSITION IN NEUROBIOLOGY AND MEMORY. Research interests in neuroendocrine regulation of memory, long-term potentiation, kindling, or aging and memory. To begin by 1 September 1986. Send curriculum vitae and names of three references to: Dr. Paul E. Gold, Department of Psychology, Gilmer Hall, University of Virginia, Charlottesville, VA 22903-2477. *An Equal Opportunity/Affirmative Action Employer.*

POSTGRADUATE RESEARCH BIOLOGIST

Postgraduate research biologist position available to study the mechanisms and regulation of bacterial transport systems employing molecular genetic and biochemical approaches. Must have Ph.D. Salary range: \$20,904 to \$26,052. Send curriculum vitae and two reference letters to: Dr. M. H. Saier, Department of Biology, C-016, University of California, San Diego, La Jolla, CA 92093. *UCSD is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available August 1986 to work on the genetics of bacterial transformation from an evolutionary perspective. Salary: \$21,000 per year. Some teaching required. Initial appointment for 12 months, with possibility of reappointment for an extra 2 years. Send curriculum vitae, statement of research interests, and letters of reference by 30 April to: Dr. Richard Michod, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ 85721.

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

PROJECT DIRECTOR to direct conduct of commercial and government contracts in cytogenetics. Must have a Ph.D. in cytogenetics, a minimum of 4 years of experience in cytogenetic research, and familiarity with chromosome aberrations and chromosome sister-chromatid exchange methodologies in both human lymphocytes and established cell lines. \$25,300 annually. Job location: Kensington, Maryland. Send résumé and copy of ad to: Department of Employment and Training, 1123 North Eutaw Street, Room 201B, Baltimore, MD 21201. Job order No. 5012484.

RADIOCHEMIST/RADIOPHARMACOLOGIST

The Physiology Department at the Armed Forces Radiobiology Research Institute (AFRRI) is currently seeking candidates for a position in radiochemistry/radiopharmacology to conduct animal research on the ionizing radiation-induced pathophysiology of organ systems. This institute, a command of the Defense Nuclear Agency, is the principal radiobiology research laboratory for the Department of Defense. The Physiology Department studies the physiological and biophysical mechanisms of radiation insult to cellular, organ, and whole animal systems. The Physiology Department is also interested in the interaction between chemical or pharmacological factors and the physiological response to radiation. In addition to planning and conducting independent research, the successful applicant will train scientists and technicians in nuclear medicine and radioisotope techniques. The candidate should have a strong publication record, as well as independent research experience beyond the doctoral level. This position is available immediately and has a salary range from \$30,000 to \$40,000. To apply for this 4-year-term civil service position, send application including SF-171, curriculum vitae, and reprints of representative published research to: The Armed Forces Radiobiology Research Institute, Civilian Personnel Office, Bethesda, Maryland 20814-5145, by 30 April 1986. Reference Announcement Number 108/85A. Direct inquiries to: Dr. David R. Livengood, Department Chairman; 202-295-1212, or Mr. Vince Ackermann, Personnel Specialist; telephone: 202-295-1426. *The AFRRI is an Equal Opportunity Employer.*

RESEARCH ASSOCIATE. Ph.D. in microbiology, cellular biology, or related disciplines. Candidates will have experience in cell culture and immunologic techniques. Experience in protein purification, chromatography, electrophoresis, and enzyme assays desirable. Send résumé to: Dr. F. J. Volenc, Division of Cellular Biology, School of Basic Life Sciences, 109 BSB, University of Missouri, Kansas City (UMKC), 5100 Rockhill Road, Kansas City, MO 64110. *UMKC is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITIONS: Available 1 July 1986, two positions in laboratories studying the molecular biology of the regulation of nucleotide synthesis. Experience in techniques pertinent to cDNA and/or genomic cloning is necessary. U.S. citizenship or permanent residency status required. Send curriculum vitae and names and addresses of three references to: **Dr. Michael A. Becker, Box 74, University of Chicago Medical Center, 5841 South Maryland, Chicago, IL 60637.** *The University of Chicago is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FOR RESEARCH ASSOCIATE POSITIONS are available to study: (i) The induction of cytochrome P-450 isozymes by alcohol, pyrazole, and other agents. Experience in protein purification, antibody production, and/or molecular biological techniques desirable. (ii) The generation of active oxygen radicals by cells and subcellular organelles and their role in alcohol toxicity. Experience in liver cell preparation and cultures desirable. Salary and starting date are negotiable. Appointment for 2 or 3 years. Please send résumé, brief description of research experience, interests, and references to: **Dr. Arthur I. Cederbaum, Department of Biochemistry, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, NY 10029.** *An Equal Opportunity Employer.*

RESEARCH POSITION

To work on the mechanisms of development, differentiation, and neurotransmission in the hippocampal region of mammalian brain. To oversee a tissue culture facility that cultures mammalian neurons and cell lines. Develop monoclonal antibodies for the investigation and characterization of hippocampal neurons. To design and perform biochemical and immunological experiments for analysis of neurotransmitters, glycoconjugates, and fluorescence-activated cell sorting. Analyze the results of the experiments and contribute to the development of papers and manuscripts for publication/presentation. Applicants should have a B.S. degree and several years of practical experience in the above-mentioned areas. Salary: \$25,000 per annum. Please send résumé to: **Division of Employment Security, Hurley Building, Boston, MA 02144,** and refer to job reference No. 6355.

POSITIONS OPEN

POSTDOCTORAL PH.D. to investigate mechanisms of hyperthermia and x-ray killing in synchronous mammalian cells in culture; utilizing flow cytometry, cell separation techniques, cinematography, and electron microscopy. Studies include DNA damage and its repair, repair enzymes, chromosome aberrations, and several ultrastructural and biochemical endpoints. Salary depends on experience, research ideas, and goals. (Must be U.S. citizen or permanent resident). Contact or call: **Dr. William C. Dewey, Radiation Oncology Research Laboratory, University of California, CED-200, San Francisco (UCSF), CA 94143; telephone: 415-476-2461.** *USCF is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to study mechanisms of arm regeneration and autotomy. Experience in EM, autoradiography, scintillation counting, and isolation and purification of biomolecules desirable, but not essential. Send curriculum vitae and names of three references to: **Dr. Philip V. Mladenov, Biology Department, Mount Allison University, Sackville, New Brunswick, Canada E0A 3C0; telephone: 506-364-2508.**

RESEARCH SCIENTIST IN TUMOR IMMUNOLOGY OR TUMOR BIOLOGY

The Dana-Farber Cancer Institute, affiliated with Harvard Medical School, announces an opening for a research scientist with experience in performing experiments in small animals. Applicants should have a Ph.D. (or equivalent degree) and some postgraduate training in one or more of the following areas: immunology, pharmacology, toxicology, in vivo drug testing. The successful candidate will join a team involved in research and development of immunotoxins as reagents for treatment of human cancer. The individual will be responsible for establishing appropriate tumor models in mice, including nude mice, and will use these models for the in vivo testing of the immunotoxins. Applicants should arrange for curriculum vitae and three letters of recommendation to be sent to: **Dr. W. Blättler, Division of Tumor Immunology, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115.** *An Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

RESEARCH INSTRUCTOR POSITION: Available in the field of plant glycoprotein biosynthesis. Applicant will be expected to have some expertise in plant tissue culture methodology and in the techniques for solubilization and purification of membrane-bound enzymes. Experience in carbohydrate chemistry and analyses will be helpful, though not required. Applicants must have a Ph.D. in biochemistry or plant physiology or related areas and should have several years of postdoctoral experience. Both teaching and research responsibilities will be required. Salary will be in the range of \$20,000 to \$25,000, depending on qualifications. Send résumé to: **Dr. Alan D. Elbein, Department of Biochemistry, The University of Texas Health Science Center, San Antonio, TX 78284-7760.** *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH MANAGER WETLANDS ECOLOGY. A permanent, full-time research administration position is available in the Division of Wetlands Ecology at the Savannah River Ecology Laboratory (SREL) of the University of Georgia in Aiken, South Carolina. The successful candidate will be responsible for the daily management of a large multidisciplinary wetlands research program, including project coordination, contract administration, and report preparation. The research manager reports directly to the head of the Division of Wetlands Ecology. Together, the division head and research manager design and manage SREL wetlands research to achieve program goals. Frequent interaction with SREL research faculty, and with university, federal, and state personnel is required. Knowledge of federal and state environmental regulations pertaining to wetlands and wildlife, project and personnel management, and contract supervision are essential. Supervisory and communication skills will be weighed heavily in evaluating candidates. Candidates must be U.S. citizens and have Ph.D. degree and training in ecology or environmental science. Salaries are commensurate with qualifications and experience. Applicants should send their résumés, reprints, and the names, addresses, and telephone numbers of four references by 30 April to: **Dr. Rebecca R. Sharitz, Head, Division of Wetlands Ecology, Savannah River Ecology Laboratory, Drawer E, Aiken, South Carolina 29802.** *Equal Opportunity Employer.*

Molecular Genetics Medical Staff Fellowship National Institutes of Health

The Molecular Genetics Section of the Genetics and Biochemistry Branch, National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases, National Institutes of Health, is offering a Medical Staff Fellowship in Molecular Genetics. Applications are invited from individuals of the highest caliber with the M.D. or M.D., Ph.D. degrees. Applicants should have two years of clinical experience and research experience is preferred. Applications are being accepted now for appointments which begin July 1987 or earlier. The appointment is for two years and there is a possibility of extension of the appointment for a third year. Medical Staff Fellows receive an initial salary of \$30,000, with increments of \$2,000 per year.

The Medical Staff Fellow may participate in the NIH Interinstitute Medical Genetics Program as well as carry out research in basic molecular genetics involving recombinant DNA

techniques and DNA-mediated gene transfer into eukaryotic cells. The research in the Section includes work on a human and other eukaryotic recombinases and the study of immunoglobulin rearrangements.

Interested candidates should submit their curriculum vitae and the name of three references to:

Dr. R. Daniel Camerini-Otero
Chief, Genetics and Biochemistry Branch
National Institute of Arthritis, Diabetes,
and Digestive and Kidney Diseases
Building 10, Room 9D-15
National Institutes of Health
Bethesda, Maryland 20892



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POSITIONS OPEN

SEARCH REOPENED RESEARCH PROFESSOR IN ENTOMOLOGY

The Department of Entomology and Economic Zoology is seeking a nationally recognized entomologist with a significant record of achievement in research and extramural competitive grant success, to establish a research program in some aspect of integrated pest management such as, but not limited to, insect toxicology/biochemistry or insect population genetics. The applicant will be expected to teach undergraduate and/or graduate courses in his/her area of specialization. Successful candidate should have demonstrated administrative and leadership capabilities and must have an understanding of experiment station objectives.

This is a 12-month, senior-level position. Nominations and applications should be sent before 30 June 1986 to:

Dr. Herbert T. Streu
Department of Entomology and Economic Zoology
Cook College

J. B. Smith Hall, Georges Road
New Brunswick, NJ 08903

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RESEARCH SCIENTIST POSITIONS (TWO) CENTER FOR COMPLEX SYSTEMS FLORIDA ATLANTIC UNIVERSITY

The new interdisciplinary Center for Complex Systems at Florida Atlantic University under the joint leadership of Professors **J. A. S. Kelso** and **H. Haken** (theoretical physics, Stuttgart) invites applications for two postdoctoral research scientist positions, commencing September 1986. Successful applicants will participate in a program whose chief theoretical and experimental focus is the control and coordination of multidegree of freedom, nonlinear dynamical systems, with particular reference to biological motion and the information that supports it.

Research facilities include equipment for high-speed monitoring and perturbation of three-dimensional motion, as well as physiological signals associated with limb and speech articulator movement. Excellent computer facilities are also available for analysis and modeling work, including a micro VAX II linked to a VAX 11/780, bitmap graphics and display capabilities, and so forth. Individuals from a variety of disciplines are encouraged to apply, including biology (especially neurobiology), physics, psychology, kinesiology, engineering, and computer science. Inquiries from those interested in specific applications—for example, prosthetics, robotics, man-machine interaction, and speech recognition—are also welcome. Interactions within the university are promoted both with existing departments and the university's Center for Robotics and Center for Applied Stochastics.

Programming skills and familiarity with signal processing are desirable. The position will be guaranteed for a minimum of 2 years with an annual salary of \$23,000 to \$25,000, plus fringe benefits. Candidates should provide a brief summary of their interests and future plans and curriculum vitae and arrange for three letters of recommendation to be sent before 1 May 1986 to: **J. A. S. Kelso, Center for Complex Systems, Florida Atlantic University, Boca Raton, Florida. Florida Atlantic University is an Equal Opportunity/Affirmative Action Employer and encourages applications from minorities and women.**

RESEARCH TECHNICIAN MOLECULAR NEUROBIOLOGY

Position available for technician with extensive experience in somatic cell hybridization techniques, monoclonal antibody production, and immunochemical assays. Applicant will be responsible for the generation, screening, and characterization of antibodies against neuronal cell surface antigens. Send curriculum vitae and references to: **Barbara Muller, Howard Hughes Medical Institute, Columbia University, 722 West 168 Street, New York, NY 10032. An Equal Opportunity Employer.**

Available immediately: position of **VISITING ASSISTANT RESEARCH SCIENTIST** (nontenure-faculty) for research on microbial metabolites/pesticides. Position is for 1 to 3 years; annual salary: \$18,500. Must have Ph.D. in pharmacognosy/medicinal chemistry with additional 3 to 5 years of research experience in natural products. Send curriculum vitae, references, and publications by 4 April to: **Dr. K. V. Rao, Box J-485, JHMC, Gainesville, FL 32610. Equal Employment Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

RESEARCH SCIENTIST

Syngene Products and Research, a division of Tech-America Group, Inc., is involved in the research, development, and production of diagnostics for animal and human health care. A position is available for a Ph.D. with background in immunology/virology. Experience in immunodiagnostic or nucleic acid diagnostic assay development is advantageous. The successful applicant will join the existing research group and become actively involved in ongoing projects, as well as in the planning and development of new research projects. Send curriculum vitae and the names and addresses of three references to: **Dr. Yosh Teramoto, Syngene Products and Research, P.O. Box 2338, Fort Collins, CO 80522.**

RESEARCH VIROLOGIST

Beecham Laboratories, a leading manufacturer of veterinary biologicals, has the following position available: research virologist, M.S. or Ph.D. with experience in veterinary and industrial research desirable. To apply send résumé, plus salary requirements, to: **Hans Draayer, Manager Biological Research and Development, Beecham Laboratories, East Lincoln Road, White Hall, IL 62092. An Equal Opportunity Employer.**

SCIENTIST. Genentech, Inc., a leader in the field of biotechnology, has an opening in our medicinal and analytical chemistry group for a scientist to investigate stability and degradation reactions of proteins and other related problems. Successful candidate will have a relevant Ph.D. and at least 2 years of postdoctoral experience in the field of protein conformation, enzyme kinetics, or protein modification techniques. This self-motivated individual must be familiar with a broad range of protein biochemistry methods.

We offer an excellent salary and benefits package. Please send résumé to: **Human Resources Department, Number 1351, Genentech, Inc., 460 Point San Bruno Boulevard, South San Francisco, CA 94080. An Equal Opportunity Employer.**

SENIOR RESEARCH ASSOCIATE

Protein biochemist holding Ph.D. degree and at least 2 years of postdoctoral training to be an active participant in well-developed but innovative study of biologically relevant protein-lipid interactions. Problem area deals primarily with separation, isolation, and characterization of unique human liver secretory proteins having a variety of biological functions. Co-workers consist of an interactive group already of critical size for productivity. Candidates should have appropriate biochemistry, cell biology, and possibly applied immunochemistry experience. Submit complete résumé and names of three references to: **G. I. Research Unit, Cleveland Clinic Foundation Research Institute, 9500 Euclid Avenue, Cleveland, 0410-44106. An Equal Opportunity Employer.**

ZOOLOGIST. A tenure-track position as assistant professor beginning fall 1986. A broadly trained Ph.D. biologist who can participate in an introductory biology course. The successful applicant should have teaching and research interests in animal development and/or invertebrate physiology. Salary commensurate with experience. Send curriculum vitae, a statement of research interests, and three letters of reference by 31 March 1986 to: **Dr. Michael E. Seidel, Chair of Search Committee, Department of Biological Sciences, Marshall University, Huntington, WV 25701. Marshall University is an Equal Opportunity/Affirmative Action Employer and invites and encourages applications from minorities and women.**

ZOOLOGIST. The National Marine Fisheries Service (NMFS) National Systematics Laboratory located in the National Museum of Natural History carries out systematic studies on groups of commercially important marine organisms. A position will be open after 1 April 1986, at the GS-11 level, for systematic malacologist to revise important groups of squids such as *Illex* and *Loligo*. The current starting salary is \$26,381. For further information, contact: **Dr. Bruce B. Collette, NMFS, Systematic Laboratory, National Museum of Natural History, Washington, DC 20560.** Information as to how to apply for this position may be obtained from: **Personnel Division, Eastern Administrative Support Center, 253 Monticello Avenue, Room 409, Norfolk, VA 23510; telephone: 804-441-6880. An Equal Opportunity Employer.**

POSITIONS OPEN

SENIOR FACULTY RESEARCH POSITION COLLEGE OF PHARMACY AT THE UNIVERSITY OF GEORGIA

The Department of Medicinal Chemistry is seeking candidates for a senior faculty research position. The applicant should have a background in chemistry or biology and an outstanding record of research supported by extramural funding. Candidates should qualify for appointment at the associate or full professor rank. A background in pharmacy or the pharmaceutical sciences is not required. The successful candidate will be expected to continue a vigorous research program, encouraged and supported to build a thematic research group within and outside the college, and teach graduate-level courses.

Applicants should submit a detailed résumé, a description of their research program, and the names of three references to: **Dean Howard C. Ansel, College of Pharmacy, University of Georgia, Athens, Georgia 30602.** The deadline for receipt of applications is 1 May 1986. *Affirmative Action and Equal Opportunity Employer.*

PUBLIC MEETING

PUBLIC MEETING: 13 MAY 1986*

10:00 a.m.—1:00 p.m.

National Academy of Sciences Auditorium
2101 Constitution Avenue, NW
Washington, DC 20418

The Committee on Diet and Health of the **Commission on Life Sciences' Food and Nutrition Board, National Research Council**, will hold a public meeting on 13 May 1986, at 10:00 a.m. at the National Academy of Sciences, 2101 Constitution Avenue, Washington, DC 20418. The purpose of the meeting is to solicit scientific information and comments pertaining to the role of dietary patterns and dietary constituents in the susceptibility to chronic diseases. The Committee will consider criteria for interpreting data and evaluate current evidence on the relationship of diet to chronic diseases such as cancer, atherosclerosis, hypertension, diabetes, obesity, osteoporosis, and others. The Committee will also attempt to formulate dietary guidelines for reducing the risk of chronic diseases, propose strategies for implementing these guidelines, and identify areas for further research.

Individuals who wish to make a presentation or submit material for the committee's consideration should forward written statements to: **Dr. Susan Berkow at the above address by 23 April 1986.** For further details, contact: **Dr. Berkow at 202-334-2905.**

*Free registration. No preregistration required. Attendees are asked to register at C Street entrance (parking unavailable).

TRAINEESHIPS

POSTDOCTORAL TRAINEESHIPS at the University of Virginia in cancer cell biology, molecular biology, virology, and immunology supported by the National Cancer Institute. Competitive stipends and fringe benefits. Primary research interests (and supervisors) include (i) immune regulation and hybridomas (**Benjamin**); (ii) cell and adenovirus transcription regulation (**Beyer**); (iii) viral structure and membranes (**Brown**); (iv) viral/trypanosome transcription controls (**Emerson**); (v) molecular biology of histocompatibility gene expression (**Engelhard**); (vi) venoms and protein structure/sequencing (**Fox**); (vii) bacterial genetics/recombinant DNA (**Kadner**); (viii) *c-src* transformation/growth regulation (**S. Parsons**); (ix) sarcoma virus DNA recombinants and sequencing (**T. Parsons**); (x) molecular organization and genetics of bacterial membranes (**Schnaitman**); (xi) yeast histone gene DNA sequences and function (**Smith**); (xii) molecular biology of leukemogenic viruses (**Thomas**); (xiii) tetanus toxin plasmids and monoclonal antibodies (**Volk**); (xiv) molecular biology of viral membrane proteins (**Wagner**); and (xv) molecular events in viral transformation (**Weber**).

APPLICATIONS: Send curriculum vitae, description of research interests, and letters from three references to: **Dr. Robert R. Wagner, Chairman, Department of Microbiology, Box 441, University of Virginia Medical School, Charlottesville, Virginia 22908.**

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Clinical Research Scientists

Smith Kline & French Laboratories, a leader in pharmaceutical research, is seeking Clinical Research Scientists to join our new Clinical Research Unit located in suburban Philadelphia. These individuals will be responsible for protocol writing, clinical trials planning and data analysis and report writing. They will also provide technical and scientific expertise to staff physicians. These positions offer diverse responsibilities and good career visibility for the candidate with strong administrative and interpersonal skills.

Successful candidates will have Ph.D. in pharmacology or related field with specialization in cardiovascular discipline. They will also possess three years post-doctoral experience (1-2 years clinical trials experience preferred). Supervisory experience is helpful but not essential. Demonstrable skill in written and oral communication of scientific data as well as significant skill in employing fourth generation computer programming tools are highly desired.

We offer excellent compensation and benefits programs and a stimulating work atmosphere in a technologically advanced environment. Interested and qualified candidates should send C.V. with salary requirements to: T. Daniels, Manager, Personnel Relations, SK&F Labs, 1566 Spring Garden Street, Philadelphia, PA 19101. We are an Equal Opportunity Employer, M/F/H/V

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SENIOR SCIENTIST Ph.D. Level

Atherosclerosis Research

The Pharmaceutical Research Division of Warner-Lambert/Parke-Davis has an immediate opening for a scientist to support new drug discovery efforts in the Atherosclerosis Section of the Pharmacology Department.

The successful applicant will evidence:

- Demonstrated accomplishment in the experimental biology of atherosclerosis and expertise in both qualitative and quantitative evaluation of atherosclerotic lesions.
- Thorough understanding of the disease process as it relates to lipoprotein and cholesterol metabolism, connective tissue metabolism and arterial cell biology.
- Familiarity with state-of-the-art methods for investigating pharmacological effects on the progression of atherosclerosis in suitable experimental models.
- Ph.D. or equivalent with up to 3 years postdoctoral experience in the above.
- Excellent oral and written communication skills.

Our research facilities adjacent to the University of Michigan campus in Ann Arbor, Michigan are among the finest and best equipped in the world and are devoted exclusively to the discovery and development of new drugs. We offer excellent compensation, benefits and work environment. Send resume with salary requirements and references in confidence to: **Ms. D. Love, Human Resources Supervisor, WARNER-LAMBERT/PARKE-DAVIS, PHARMACEUTICAL RESEARCH DIVISION, 2800 Plymouth Road, Ann Arbor, Michigan 48105 — An Equal Opportunity Employer M/F/H.**

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ANNUAL MEETING

AMERICAN MALACOLOGICAL UNION (AMU) ANNUAL MEETING, MONTEREY, CALIFORNIA 1 to 5 JULY 1986

The AMU will hold its annual meeting at the Sheraton Hotel in Monterey, California, 1 to 5 July 1986. The meeting will feature three symposia: The Biology of Opisthobranch Molluscs, Life History, Systematics and Zoogeography of Cephalopods and Molluscan Morphological Analysis. There will also be several contributed papers sessions addressing marine, freshwater, and terrestrial molluscs. Participation by all molluscan workers is welcome. For information, contact: Dr. James Nybakken, Moss Landing Marine Laboratories, P.O. Box 450, Moss Landing, CA 95039. Telephone 408-633-3304.

SYMPOSIUM

FIRST UNIVERSITY OF COLORADO RED SYMPOSIUM ON CANCER AND GENE EXPRESSION

Sessions on viral and cellular oncogenes, growth regulatory factors with breast cancer as a model, growth factors, and neoplasia. **POSTER SESSION.** To be held at University of Colorado, Boulder Campus, 21 to 24 June 1986. Registration fee of \$150 includes meeting attendance and social activities. Room and board: \$80 to \$110 for all 3-1/2 days. Sponsored by Reproduction, Endocrinology, and Development Program (RED) of the University of Colorado.

Inquiries and Application:
Office of Conference Services
University of Colorado
Campus Box 153
Boulder, CO 80309—0153

CONFERENCE

MACROMOLECULES, GENES, AND COMPUTERS: 12 to 17 August, White Mountain Conference Center, Waterville, New Hampshire. Sponsored by GenBank-Los Alamos and MBCRR-Harvard University and Dana-Farber Cancer Institute.

Subjects included are comparative sequence analysis; macromolecular recognition and structures; regulatory pattern identification; molecular evolution; database searches; gene organization and genetic maps; and related mathematical and computer considerations. The emphasis will be on unsolved problems in the interpretation and analysis of molecular sequence data. There will be workshops on the use of current computer software and databases, as well as graphic and other computer tools. Attending researchers are encouraged to contribute papers to the poster sessions and/or open workshops. These may be on any molecular biology sequence or structural analysis applications or on new relevant software developments. The registration fee, including housing and meals, is \$360. Limited travel and registration fee support is available. Arrangements are also possible for friends and family attendance. For further information and applications, write: Dr. Temple F. Smith, MBCRR, Director, or Karen D. Gruskin, Meeting Coordinator, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115; telephone 617-732-3601.

TRAINING PROGRAM

PHYSICIAN SCIENTIST TRAINING PROGRAM

Qualified applicants are sought for a 5-year interdepartmental training program for physician scientists interested in the etiologic mechanisms of disease, with special reference to the role of extrinsic chemical and physical agents and their effects at the molecular level. Salary, research, travel, and educational costs are included. Interested physicians, who should have completed their clinical training before joining the program, are invited to apply, by 15 May 1986, to: Dr. Arthur C. Upton, Professor and Chairman, Department of Environmental Medicine, New York University Medical Center, 550 First Avenue, New York, New York 10016. *New York University is an Equal Opportunity/Affirmative Action Employer.*

TRAINING PROGRAM

NIH TRAINING PROGRAM Predoctoral Training in Cardiovascular Physiology

The Department of Physiology of the College of Graduate Studies and Jefferson Medical College of Thomas Jefferson University offers a Ph.D. program in physiology. Research areas include studies on circulatory shock; myocardial ischemia; pulmonary edema; prostaglandins, thromboxanes, and leukotrienes in pathophysiology of cardiovascular diseases; neuropeptides and blood pressure regulation; neural control of circulatory function; control and metabolism of smooth muscle; and endothelial cell biology. Write for brochure and application materials to: Dr. Allan M. Lefer, Professor and Chairman, Department of Physiology, Jefferson Medical College, 1020 Locust Street, Philadelphia, PA 19107. *An Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

IMPERIAL CANCER RESEARCH FUND Research Fellowship

A postdoctoral fellowship is available to work on gene expression in mammalian cells. The DNA sequences involved in gene expression and the mechanisms involved in their control will be investigated. Candidates should have experience in molecular biology and recombinant DNA technology.

The award will be tenable for 3 years on the salary range £10,642 to £13,018. Entry depending upon qualifications and experience.

Please send full curriculum vitae and names of three references to: The Personnel Officer, Imperial Cancer Research Fund, Lincoln's Inn Fields, London, England WC2A 3PX, quoting reference: 57/86.

NATIONAL INSTITUTES OF HEALTH STAFF FELLOWSHIP Molecular Biology and Autoimmunity

Molecular biologist with experience in recombinant DNA technology and construction of vectors to work in the area of autoimmune diseases. The candidates should have at least 3 years of postdoctoral experience. The initial appointment as a staff fellow will be for 2 years with renewals on a yearly basis. Salary depends on experience and ranges from \$24,000 to \$47,000 per year. The position is available immediately. Send curriculum vitae and the names of three references to: Abner Louis Notkins, M.D., Chief, Laboratory of Oral Medicine and Scientific Director, National Institute of Dental Research, National Institutes of Health, Building 30, Room 121, Bethesda, Maryland 20892. *NIH is an Equal Opportunity Employer.*

HARRINGTON ARTHRITIS RESEARCH CENTER, POSTDOCTORAL FELLOWSHIP position available for 2 years, starting July 1986, to participate in an active multidisciplinary program devoted to basic and applied research related with arthritis. Need for expertise in epidemiology, immunology, and pharmacology. Apply with curriculum vitae to: Thomas Gruen, Assistant Director, Harrington Arthritis Research Center, 1800 East Van Buren, Phoenix, AZ 85006.

HUMAN BEHAVIORAL PHARMACOLOGY

Postdoctoral fellowships are available at the Johns Hopkins University School of Medicine for research and training in the human behavioral pharmacology of substance abuse. Studies of (i) drug effects on psychomotor, cognitive, and social behavior, mood, and affect; (ii) opioid physical dependence and stimulus effects; (iii) analysis of cigarette smoking behavior; and (iv) substance abuse treatment (methadone, polydrug). For psychologists, pharmacologists, psychiatrists. USPHS stipends are \$16,000 to \$22,000 approximately plus supplement for M.D.'s. Productive laboratory with excellent resources and support. Contact: George E. Bigelow, Ph.D., D-5-West, Psychiatry Department, Johns Hopkins/Key Medical Center, Baltimore, MD 21224. Telephone: 301-955-0035. *An Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

GEORGE S. WISE POSTDOCTORAL FELLOWSHIPS

The George S. Wise Faculty of Life Sciences at Tel Aviv University offers each year postdoctoral fellowships commencing on 1 October in basic and applied biology.

The faculty is engaged in such research areas as anatomy, taxonomy, and physiology of plants; anatomy, sociobiology, and physiology of animals; marine biology; cellular and molecular biology and genetics; lipid and protein research; bioenergetics; neurobiology; immunology; virology; cancer biology; and biotechnology and nature preservation. Application forms can be obtained from: The Dean, The George S. Wise Faculty of Life Sciences, Tel Aviv University, Tel Aviv, Israel 69978. Deadline for applications is 30 May of each year.

POSTDOCTORAL POSITION available 1 July 1986 to characterize murine autoreactive T lymphocytes including their normal and pathological functions and mode of expression, for example, lymphokines. Interest or experience in cellular immunology and biochemistry is desired. Salary: \$20,000 per year. Send curriculum vitae and names of three references to:

Robertson Parkman, M.D., Head
Division of Research Immunology/
Bone Marrow Transplantation
Childrens Hospital of Los Angeles
4650 Sunset Boulevard
Los Angeles, CA 90027

CALL FOR ABSTRACTS

THE NEW YORK ACADEMY OF SCIENCES Fourth Colloquium in Biological Sciences

BLOOD BRAIN TRANSFER

Vista International Hotel, New York City
3 November 1986

CALL FOR ABSTRACTS

This 1-day colloquium will feature six invited speakers eminent in the field of biological sciences. An important aspect of the meeting will be posters presented by members of the academy. Topics for the posters may be in any of the areas of biological sciences (biochemistry, biological sciences, biomedical sciences, biophysics, microbiology, neuroscience). Members are cordially invited to submit abstracts to the Organizing Committee of the Colloquium for consideration. Members may also sponsor presentations by nonmembers. Those whose abstracts are accepted will be invited to display their posters and to submit a short manuscript. After review, a selected number of these short manuscripts, as well as those of the invited speakers, will be published as a volume of the *Annals of the New York Academy of Sciences*. Completed abstract forms are due 1 July 1986.

Speakers: Michael W. B. Bradbury, King's College; Helen F. Cserr, Brown University; Joseph D. Fenstermacher, State University of New York at Stony Brook; Gary W. Goldstein, University of Michigan Medical School; Richard A. Hawkins, Pennsylvania State University College of Medicine; and William M. Pardridge, University of California at Los Angeles School of Medicine. For abstract forms, program, and registration information, write to: Conference Department, The New York Academy of Sciences, 2 East 63 Street, New York, NY 10021.

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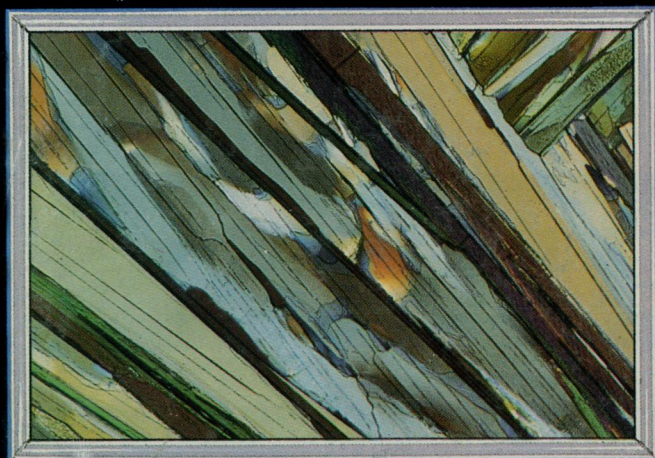
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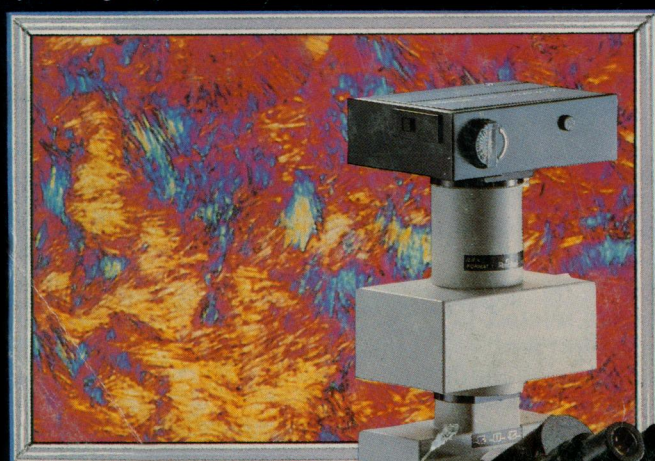
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