

we will be in a much better position to investigate his mathematical activities and judge his broader role in the French and Scottish Enlightenment. The majority of the letters in this volume were collected by John C. Eaton, who died in 1972 before completing the editorial project. Stella Mills has added numerous additional letters, has edited them all knowledgeably, and has provided translations where necessary. She has also included a brief historical introduction. The book is easy to use and will be a great boon to historians of 18th-century mathematics.

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Arachnids

Biology of Spiders. RAINER F. FOELIX. Translated with revisions from the German edition (Stuttgart, 1979). Harvard University Press, Cambridge, Mass., 1982. x, 306 pp., illus. \$30.

The approximately 30,000 species of spiders that make up the largest and most commonly encountered arachnid order are surprisingly diverse in and well adapted to most terrestrial habitats. Despite this, they have received comparatively little attention and are only poorly known by most biologists. This may be in part because most books devoted to the group have focused extensively on taxonomy and natural history and have treated other aspects of spider biology only cursorily. It is this deficiency that Foelix attempts to remedy.

The book is a solid introduction and reference for persons interested in spiders. Chapters on functional anatomy, metabolism, neurobiology, development, ecology, and phylogeny and systematics follow an introductory chapter in which basic features and classification are presented and a profile of five common families is provided for perspective. The book is clearly written, well integrated, and enhanced by an impressive number of illustrations, many of which have previously appeared only in its German edition. The book's 180 figures contain 17 graphs, 182 diagrams and drawings, 65 photographs, and 108 light, transmission electron, and scanning electron micrographs. A list of 563 references provides an effective introduction to the literature.

The reader is shown a world in which some effectively blind inhabitants instantaneously transform protein solution into

stable strands twice as elastic as nylon and, using legs operated in part by hydraulic pressure, fashion this silk into often species-specific webs used to snare prey and, eventually, as an instrument for vibratory courtship. Still other members of this exclusively predatory world see prey at distances of 40 centimeters and use tetraocular vision to stalk it.

Remaining detailed and conclusive, the book yet conceals neither the many unresolved facets of spider biology nor the potential use of spiders as tools for investigations in various disciplines. For example, mechanical and evolutionary problems inherent in coupling of intricate male and female genitalia become evident, as do metabolic problems associated with transferral and activation of sperm stored in a quiescent state by both sexes.

The chapters on ecology and on phylogeny and systematics include, as the author notes, only selected aspects and do not, as the others do, present more comprehensive treatments. In the case of phylogeny and systematics this is probably appropriate, but a more complete discussion of ecology seems warranted. However, many aspects of the subject are treated in other chapters, and a reader is provided with a well-balanced view of spider biology.

BRENT D. OPELL

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Books Received

Abscission. Fredrick T. Addicott. With illustrations by Alice B. Addicott. University of California Press, Berkeley, 1982. xviii, 370 pp., illus. \$39.50.

Achievement, Stress, and Anxiety. Heinz W. Krohne and Lothar Laux, Eds. Hemisphere, Washington, D.C., 1982. xii, 388 pp. \$34.50. The Series in Clinical and Community Psychology.

Advanced Engineering Analysis. J. N. Reddy and M. L. Rasmussen. Wiley-Interscience, New York, 1982. xvi, 488 pp. \$39.95.

Advances in Applied Mechanics. Vol. 22. Chia-Shun Yih, Ed. Academic Press, New York, 1982. xii, 328 pp., illus. \$53.

Biology. Karen Arms and Pamela S. Camp. Saunders, Philadelphia, ed. 2, 1982. xxxii, 942 pp., illus. Cloth.

Biomolecular Stereodynamics. Proceedings of a symposium, Albany, N.Y., Apr. 1981. Ramaswamy H. Sarma, Ed. Adenine Press, Guilderland, N.Y., 1981. Two volumes, illus. xiv, 472 pp., and xiv, 502 pp. \$170.

Cardiovascular Toxicology. Papers from a symposium. Ethard W. Van Stee, Ed. Raven, New York, 1982. xii, 388 pp., illus. \$45. Target Organ Toxicology Series.

Catastrophe or Cornucopia. The Environment, Politics and the Future. Stephen Cotgrove. Wiley, New York, 1982. xii, 154 pp. Cloth, \$35.95; paper, \$19.95.

Disorders of Mineral Metabolism. Felix Bronner and Jack W. Coburn, Eds. Academic Press, New York, 1981 and 1982. Vol. 1, Trace Minerals. xvi, 500 pp. \$59. Vol. 2, Calcium Physiology. xvi, 568 pp., illus. \$67.

Double Dilemma. Minorities and Women in Science Education. Jane Butler Kahle. Purdue University, West Lafayette, Ind., 1982. xviii, 164 pp., illus. Paper, \$5.95.

Down to Earth. Environment and Human Needs. Erik P. Eckholm. Norton, New York, 1982. xvi, 238 pp. \$14.95.

Early Life. Lynn Margulis. Science Books International, Boston, 1982. xvi, 160 pp., illus. Cloth, \$16.50; paper, \$9.95. A Series of Books in Biology.

Early Thematic Mapping in the History of Cartography. Arthur H. Robinson. University of Chicago Press, Chicago, 1982. xiv, 266 pp., illus. \$35.

The Earth's Climate. Past and Future. M. I. Budyko. Translated from the Russian edition (Leningrad, 1980) by the author. Academic Press, New York, 1982. x, 310 pp., illus. \$39.50. International Geophysics Series, vol. 29.

The Economics and Politics of Health. Rita Ricardo-Campbell. University of North Carolina Press, Chapel Hill, 1982. xii, 380 pp. \$19.95.

Fundamentals of Analytical Chemistry. Douglas A. Skoog and Donald M. West. Saunders, Philadelphia, ed. 4, 1982. xiv, 860 pp., illus. Cloth. Saunders Golden Sunburst Series.

The Future of the Health Sciences. Anticipating Tomorrow. Stanley Lesse. Irvington, New York, 1981. 180 pp. \$16.95.

Gamma Ray Astrophysics. New Insight into the Universe. Carl E. Fichtel and Jacob I. Trombka. National Aeronautics and Space Administration, Washington, D.C., 1981 (available from the Superintendent of Documents, Washington, D.C.). xii, 402 pp., illus. Paper, \$10. NASA SP-453.

Gene Function. *E. coli* and Its Heritable Elements. Robert E. Glass. University of California Press, Berkeley, 1982. xvi, 488 pp., illus. Cloth, \$40; paper, \$20.

General Handbook of On-Line Process Analysers. D. J. Huskins. Horwood, Chichester, England, and Halsted (Wiley), New York, 1982. 240 pp., illus. \$84.95. Ellis Horwood Series in Analytical Chemistry.

General Theory of Evolution. V. Csányi. Translated from the Hungarian edition (1979). Akadémiai Kiadó, Budapest, 1982 (U.S. distributor, Heyden, Philadelphia). 124 pp. Paper, \$16. Studia Biologica Hungarica, 18.

Human Sexuality. Making Responsible Decisions. Linda Brower Meeks and Philip Heit. Illustrated by James C. Brower. Saunders, Philadelphia, 1982. xxii, 504 pp. Cloth.

Immunologically Active Peptides. V. A. Najjar, Ed. Nijhoff/Junk, The Hague, 1981 (U.S. distributor, Kluwer Boston, Hingham, Mass.). vi, 138 pp., illus. \$55. Developments in Molecular and Cellular Biochemistry, vol. 2. Reprinted from *Molecular and Cellular Biochemistry*, vol. 41.

Improving Group Decision Making in Organizations. Approaches from Theory and Research. Richard A. Guzzo, Ed. Academic Press, New York, 1982. xii, 160 pp. \$19.50. Organizational and Occupational Psychology.

Industrial and Business Forecasting Methods. A Practical Guide to Exponential Smoothing and Curve Fitting. Colin D. Lewis. Butterworth, Boston, 1982. x, 144 pp., illus. \$25.

Infinity and the Mind. The Science and Philosophy of the Infinite. Rudy Rucker. Birkhäuser, Boston, 1982. x, 342 pp., illus. \$15.95.

Inflammatory Diseases and Copper. The Metabolic and Therapeutic Roles of Copper and Other Essential Metalloelements in Humans. Papers from a symposium, Little Rock, Ark., Aug. 1981. John R. J. Sorenson, Ed. Humana Press, Clifton, N.J., 1982. xxii, 622 pp., illus. \$69.50. Experimental Biology and Medicine.

Innovations in Telecommunications. Proceedings of a symposium, Kuwait, Apr. 1981. Jamal T. Manassah, Ed. Academic Press, New York, 1982. 2 vols. Part A. xii, 562 pp., illus. \$59.50. Part B. xii pp. + pp. 563-1068, illus. \$54.50. International Symposia of the Kuwait Foundation.

Metabolic Adaptation to Extrauterine Life. The Antenatal Role of Carbohydrates and Energy Metabolism. Proceedings of a workshop, Brussels, Dec. 1979. R. De Meyer, Ed. Published for the Commission of the European Communities by Nijhoff, The Hague, 1981 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xxii, 372 pp. \$58.

Metabolic-Endocrine Responses to Food Intake in Infancy. Papers from a workshop, Bern, Sept. 1981. G. Zoppi, Ed. Karger, Basel, 1982. viii, 116 pp., illus. Paper, \$39. Monographs in Paediatrics, vol. 16.

Metal-Hydrogen Systems. Proceedings of a symposium, Miami, Apr. 1981. T. Nejat Veziroglu, Ed. Pergamon, New York, 1982. xx, 718 pp., illus. \$150.

Metallization Associated with Acid Magmatism. Papers from a symposium, Exeter, England, Dec. 1979. A. M. Evans, Ed. Wiley-Interscience, New York, 1982. xiv, 386 pp., illus. \$52.50. Mineralization Associated with Acid Magmatism, vol. 6.

Mineral Aspects of Dentistry. F. C. M. Driessens. Karger, Basel, 1982. xvi, 216 pp., illus. \$88.75. Monographs in Oral Science, vol. 10.

Models of Bounded Rationality. Herbert A. Simon.

(Continued on page 79)



MARINE BIOLOGICAL LABORATORY

Woods Hole, Massachusetts 02543

announces JANUARY COURSES, 1983

For the tenth consecutive January, MBL will offer intensive courses with emphasis on laboratory work, intended primarily for graduate and advanced undergraduate students. The courses last four weeks (January 2-28, 1983) and are conducted concurrently.

BEHAVIOR: In conjunction with the Boston University Marine Program, a research-oriented course of selected topics in behavior and sensory biology of marine and terrestrial animals, including primates, marine mammals, dogs, birds, fish, crustacea, insects, and coelenterates. Course consists of daily lectures and seminars by faculty on their areas of research, films, demonstrations, guided laboratory projects, and original student research projects. Topics include role of senses in behavior (localization, orientation, migration, recognition, perception, and search image); neural and hormonal control of behavior; learning and plasticity; biological rhythm; life history strategy; selection pressure (evolution, domestication, and ecology); and social behavior (agonistic and reproductive communication and ritualization; dominance and territoriality).

STAFF: Jelle Atema, Boston U., and Mel Kreithen, U. of Pittsburgh, Co-Instructors in Chief. Faculty in 1982 included: R. Barlow, Syracuse U.; C. Berg, MBL; R. Bridges, Harvard Medical School; I. Brisbin, Savannah River Ecology Program; G. Callard, Boston U.; F. Carey, WHOI; V. Dethier, U. of Massachusetts; W. Dolphin, Boston U.; E. Dorsey, Payne Labs.; R. Elgin, Boston U./MBL; L. Francis, Bates Coll.; J. Fraser, Boston U.; G. Hausfater, Cornell U.; A. Kalmijn, Scripps Inst. of Oceanography; W. Langbauer, Boston U./MBL; J. Levine, Boston Coll.; P. Marler, Rockefeller U.; P. Moller, American Museum of Natural History; K. Payne, New York Zoological Society; C. Ristau, Rockefeller U.; A. Stuart, U. of Massachusetts; M. Terman, Northeastern U.; J. Traniello, Boston U.; S. Wilcox, SUNY at Binghamton; J. Williams, Swarthmore Coll.; and T. Williams, Swarthmore Coll.

COMPARATIVE PATHOLOGY OF MARINE INVERTEBRATES: The principles of pathology and immunology will be addressed in lecture and intensive laboratory work using marine invertebrates as research animals. Topics to be covered in lecture include: mechanisms of disease at the molecular, cellular, and organ level; resistance to microbial and parasitic diseases in larval, juvenile, and adult marine invertebrates; the evolution of the immune system from *Hydra* to human; clotting pathways in the invertebrate and vertebrate; and the impact of pollutants on individuals and populations in the marine environment. Students undertake research projects which they select under the tutelage of an instructor. Techniques to be covered include cytohistopathology, fluorescence, scanning and transmission electron microscopy, immunoelectrophoresis, and cellular immunology. Journal Club meets weekly to discuss papers in specific fields of interest.

STAFF: Betsy Bang, Johns Hopkins U., and Carol Reinisch, Tufts U./MBL, Co-Instructors in Chief. Instructors in 1982 included: H. Ducklow, Columbia U.; R. Elston, Battelle Marine Research Lab.; C.A. Farley, National Marine Fisheries Service; J. Levin, Johns Hopkins U.; E. Michaelson, Harvard School of Public Health; J. Pearce, National Marine Fisheries Service; R. Prendergast, Johns Hopkins U.; A. Silverstein, Johns Hopkins Hospital; J. Strandberg, Johns Hopkins U.; and C. Sinderman, National Bureau of Commercial Fisheries.

Tuition is \$550; room and board is approximately \$300. Financial aid is available. Completed applications must be received at MBL by NOVEMBER 15. For application materials, please contact the Admissions Office, Marine Biological Laboratory, Woods Hole, Massachusetts 02543; telephone (617) 548-3705. MBL is an Equal Opportunity/Affirmative Action Institution.

Reprints from *Science* on Scientific Freedom and Responsibility

This set of 20 articles, editorials, and letters from *Science* spans 30 years of discussion and debate about the moral and ethical role of science in today's world. Authors include C.P. Snow, Bertrand Russell, Bentley Glass, and June Goodfield. A flexible introductory set of readings useful for college classes covering such areas as science and society, professional ethics, and the philosophy and history of science.

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Also available: *Professional Ethics Activities in the Scientific and Engineering Societies*, Rosemary Chalk, Mark S. Frankel, and Sallie B. Chafer. Includes statistics from AAAS survey; papers by John Ladd, Dorothy Nelkin, Warren D. Niederhauser, Joan E. Sieber, and Stephen H. Unger; extensive bibliography; and more.

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BOOKS RECEIVED

(Continued from page 46)

MIT Press, Cambridge, Mass., 1982. Two volumes. Vol. 1, Economic Analysis and Public Policy. xxiv, 478 pp. \$30. Vol. 2, Behavioral Economics and Business Organization. xviii, 506 pp. \$30.

Modern Learning Theory. Foundations and Fundamental Issues. Thomas J. Tighe. Oxford University Press, New York, 1982. x, 422 pp., illus. \$22.95.

Names for Things. A Study of Human Learning. John Macnamara. MIT Press, Cambridge, Mass., 1982. xii, 276 pp. \$17.50. Bradford Books.

Neural Models of Language Processes. Michael A. Arbib, David Caplan, and John C. Marshall, Eds. Academic Press, New York, 1982. xviii, 574 pp., illus. \$49.50. Perspectives in Neurolinguistics, Neuropsychology, and Psycholinguistics.

Neuropsychology after Lashley. Fifty Years Since the Publication of *Brain Mechanisms and Intelligence*. Jack Orbach, Ed. Erlbaum, Hillsdale, N.J., 1982. xviii, 542 pp., illus. \$49.95.

Our Changing Geopolitical Premises. Thomas P. Rona. Transaction Books (Rutgers University), New Brunswick, N.J., 1982. xii, 352 pp. Paper, \$9.95.

The Oxford Book of Insects. Pocket Edition. Text by John Burton and four others. Illustrations by Joyce Bee, Derek Whiteley, and Peter Parks. Oxford University Press, New York, 1981. viii, 202 pp. + index. Paper, \$6.95.

The Parents' Handbook of School Testing. Ann E. Boehm and Mary Alice White. Teachers College Press (Columbia University), New York, 1982. vi, 192 pp. \$14.95.

Pascal Implementation. Steven Pemberton and Martin Daniels. Horwood, Chichester, England, and Halsted (Wiley), New York, 1982. Two volumes. The P4 Compiler. 172 pp., illus. Compiler and Assembler/Interpreter. 82 pp. Paper. The two-volume set, \$64.95. Ellis Horwood Series in Computers and Their Applications.

Die Pathogenese der essentiellen EPH-Gestose. Immunologische und morphologische Untersuchungen. Jochen Gille. Organisation Gestosis-Press, Basel, 1981. 120 pp., illus. Paper, SwF 35.

Pediatric Behavioral Medicine. Ben J. Williams, John P. Foreyt, and G. Ken Goodrick, Eds. Praeger, New York, 1981. xii, 278 pp. \$29.95.

Pediatric Oncology. Proceedings of a meeting, Marseilles, Sept. 1981. C. Raybaud, R. Clement, G. Lebreuil, and J. L. Bernard, Eds. Excerpta Medica, Amsterdam, 1982 (U.S. distributor, Elsevier North-Holland, New York). xiv, 408 pp., illus. \$88.25.

Risk/Benefit Analysis. Edmund A. C. Crouch and Richard Wilson. Ballinger (Harper and Row), Cambridge, Mass., 1982. xiv, 220 pp., illus. \$23.75.

Ritual Brotherhood in Renaissance Florence. Ronald F. E. Weissman. Academic Press, New York, 1982. xiv, 254 pp. \$27.50. Population and Social Structure.

Ronald Reagan and the American Environment. An Indictment, Alternate Budget Proposal, and Citizen's Guide to Action. Friends of the Earth, San Francisco, 1982. 144 pp., illus. Paper, \$6.95.

Scale in Production Systems. Papers from a workshop, Laxenburg, Austria, June 1979. John A. Buza, Mark F. Cantley, Vladimir N. Glagolev, and Rolfe C. Tomlinson, Eds. Pergamon, New York, 1982. x, 250 pp., illus. \$50. IIASA Proceedings Series, vol. 15.

Science Indicators 1980. Report of the National Science Board 1981. National Science Foundation, Washington, D.C., 1981 (available from the Superintendent of Documents, Washington, D.C.). x, 370 pp., illus. Paper, \$10.

Science and Scientists in India. (Vedic to Modern). Nem Kumar Jain. Indian Book Gallery, Delhi, 1982. xii, 164 pp., illus. + plates. Rs. 65.

The Thick-billed Murre of Prince Leopold Island. A Study of the Breeding Ecology of a Colonial High Arctic Seabird. A. J. Gaston and D. N. Nettleship. Canadian Wildlife Service, Ottawa, 1981 (available from Printing and Publishing Supply and Services Canada, Ottawa). xxviii, 350 pp., illus. \$37.50. Studies on Northern Seabirds, Report No. 90. Canadian Wildlife Service Monograph Series, No. 6.

Thinking Better. David Lewis and James Greene. Rawson, Wade, New York, 1982. x, 312 pp., illus. \$14.95.

Toxicological Effects of Emissions from Diesel Engines. Proceedings of a symposium, Raleigh, N.C., Oct. 1981. Joellen Lewtas, Ed. Elsevier, New York, 1982. xii, 380 pp., illus. \$65. Developments in Toxicology and Environmental Science, vol. 10.

Traité de Manipulation et d'Analyse des Gaz. Henri Guérin. Masson, Paris, ed. 2, 1981. xiv, 666 pp., illus. Cloth.

Tree-Ring Dating and Archaeology. M. G. L. Bailie. University of Chicago Press, Chicago, 1982. 274 pp., illus. \$25.

Personnel Placement

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Immunologist. Ph.D. Multidisciplinary background covering wide range of cellular immunology, viral immunology, tumor immunology, and immunoregulation by lymphokines. Strong experience in immunopathology, inflammation research, macrophage biology, and cell receptor research. Experience in flow cytometry, immunopharmacology, hybridomas, immunochemistry, and development of immunoassays. Supervisory experience and publications. Desires challenging, responsible, growth-oriented position in academia, research, or pharmaceutical firm. Box 260, SCIENCE. X

POSITIONS WANTED

Ph.D. (Biochemistry) 1979; presently at Columbia University, New York; 3 years of experience in enzymology, chromatography, hybridoma technology, immunochemistry, and tissue culture. More than 20 publications. Seeking research position. Box 269, SCIENCE. X

Microbiologist. M.S., May 1982. Seeks research position with academic/research institute or industry. Interests include medical microbiology, pathogenic bacteriology. Experience with variety of general microbiological techniques. Box 268, SCIENCE. X

African Obstetrician—Gynecologist/Scientist, M.D., C.M., Ph.D. (McGill), with publications, Flex and U.S. license. Residency completed June 1982. Active candidate for American and Canadian Boards. Seeks teaching, clinical and/or research position in general obstetrics—gynecology, reproductive endocrinology and/or perinatology in United States. Box 245, SCIENCE. X

Pesticide Residue Chemist. Experienced in pesticide residue analysis of animal feed, feed ingredients, fat and other agricultural commodities. Postdoctoral experience. Ph.D. (agronomy) and M.S. (organic chemistry). Telephone: 601-373-0264 after 5 p.m. CDT. Write: Box 267, SCIENCE.

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POSITIONS OPEN

ACADEMIC POSITIONS available. The Department of Medicine at the Beth Israel Hospital and Harvard Medical School in Boston is seeking applicants (Ph.D. or M.D./Ph.D.) for positions at the assistant professor level within the Cardiovascular Division. The positions require individuals who wish to pursue basic science research in the area of intracellular calcium kinetics of myocardium and/or vascular smooth muscle. Applicants must have demonstrated significant accomplishment in this research area, and have at least 5 years of relevant postdoctoral experience. Clinical experience in non-invasive cardiology would be highly desirable. Send curriculum vitae and references to: **Dr. W. Grossman, Department of Medicine, Beth Israel Hospital, 330 Brookline Avenue, Boston, Mass. 02215.** Women and members of minority groups are encouraged to apply.

ANATOMIST; NEUROBIOLOGIST

Two positions are available at the assistant professor level in the Department of Anatomy, University of Virginia. For the first position, teaching responsibilities include gross anatomy for medical students, and candidates should have training in this activity. The area of research is open; opportunities are available for interaction with colleagues in reproductive, cellular, and developmental biology, as well as neuroanatomy. The second position is for an individual with research interests in neurobiology, such as neuroanatomy, neural development, or neurocellular biology. Primary teaching responsibilities are in medical gross anatomy and/or neuroanatomy. The department stresses research, and candidates for both positions are expected to maintain an independent program of investigation. Candidates should have postdoctoral experience. Interested persons should send their curriculum vitae and the names of three references to: **Dr. C. J. Flickinger, Chairman, Department of Anatomy, Box 439, University of Virginia Medical Center, Charlottesville, Virginia 22908.** An Equal Opportunity/Affirmative Action Employer

The Anatomy Section of the Medical Sciences Program of **Indiana University School of Medicine** at Bloomington has a tenure-track position open.

ASSISTANT PROFESSOR OF ANATOMY

The applicant must have a Ph.D. (or equivalent) with postdoctoral research experience. The position requires participation in the Program's teaching efforts in undergraduate, graduate, and medical education. The candidate will also be expected to establish a strong, independent research program and guide graduate student research. Preference will be given to candidates whose research interests are in the area of neuroscience. Send curriculum vitae, description or research interests, and three letters of recommendation to: **Chairman, Anatomy Search and Screen Committee, Medical Sciences Program, Indiana University, Bloomington, Ind. 47405,** by 15 November 1982. An Equal Opportunity/Affirmative Action Employer.

**ASSOCIATE VICE PRESIDENT
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The position requires the Ph.D. or equivalent, an established record demonstrating quality scholarship in research and administrative experience. The individual selected must have obtained significant research funding and must qualify for an appointment as a tenured professor in the university. Salary will be commensurate with qualifications and experience.

Applications will be accepted until 5 November 1982. The position is currently available and will be filled as soon as possible after the application deadline. Applications, including up-to-date curriculum vitae and the names of three references, should be sent directly to:

**Professor William E. Vehse, Chair
Associate Vice President Search Committee
President's Office
West Virginia University
Morgantown, W. Va. 26506**

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DIRECTOR, TOXIC HAZARDS DIVISION, AIR FORCE AEROSPACE MEDICAL RESEARCH LABORATORY. Air Force Aerospace Medical Research Laboratory is seeking candidates for this position, who have broad technical, managerial, and administrative experience in planning, directing, and conducting toxicological and occupational medicine research and development programs. The director is responsible for the in-house and contractual program of a research division with many teams of scientists, professional engineers, physicians, pharmacologists, and other specialists with diverse backgrounds and experience. Position requires B.S. degree with major study in a field related to health sciences or toxicology. Degree of doctor of medicine is preferred. A D.V.M. or Ph.D. with appropriate background and experience is acceptable. Plans, organizes, and directs basic and applied research to determine the metabolic, physiologic, and performance effects of toxicants; develops diagnostic and therapeutic methodology, and evaluates the toxic hazard aspects of chemical materials to obtain improved procedures for prevention and treatment of accidental toxic exposures. Candidates must have pertinent experience in toxicological/biological research and occupational medicine and significant managerial experience in the planning, conducting, control, and evaluation of multidisciplinary R & D programs, including planning and utilization of human and financial resources. Position is senior executive service, salary \$54,755 to \$61,300 (currently, ceiling frozen by Congress at \$58,500). Position vacancy announcement may be requested from: **Civilian Personnel, Headquarters Aeronautical Systems Division, Air Force Systems Command, ASD/DPCEC, Wright-Patterson Air Force Base, Ohio 45433**, or telephone: 513-255-6974/5. Please send résumé to the same address. *Equal Opportunity Employer, M/F.* Closing date for résumé is 12 November 1982.

POSITIONS OPEN

ANATOMY, FACULTY POSITION—The Department of Anatomy of the Medical College of Pennsylvania has a tenure-track faculty position available to begin 1 January 1983. Candidate should have postdoctoral experience and significant record of research experience with the capacity to function as an independent investigator in the field of cellular neurophysiology and the ability to teach or to learn to teach medical neuroscience. Rank and salary will depend upon qualifications and experience. Applicants should send a résumé, including statement of research interests and the names of three references, by 1 December 1982 to: **Dr. Leonard L. Ross, Chairman, Department of Anatomy, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129.** *An Equal Opportunity Employer, M/F.*

ANATOMY, FACULTY POSITION—The Department of Anatomy of the Medical College of Pennsylvania has a tenure-track faculty position available beginning 1 January 1983. The candidate should have postdoctoral experience and significant record of research experience, with the capacity to function as an independent investigator in the field of cellular or molecular neurobiology and the ability to teach or to learn to teach medical microscopic anatomy. Rank and salary will depend upon qualifications and experience. Applicants should send a résumé, including a statement of research interests and the names of three references, by 1 December 1982 to: **Dr. Leonard L. Ross, Chairman, Department of Anatomy, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129.** *An Equal Opportunity Employer, M/F.*

TWO tenure-track positions are available at the **ASSISTANT PROFESSOR** level. Areas of research expertise should be either in oxidative mechanisms or in cytoskeletal structure. Interest in host-defense mechanisms desirable. Candidates should send a statement of research interest and curriculum vitae to: **Dr. Moseley Waite, Department of Biochemistry, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, N.C. 27103.** Telephone: 919-748-4373. *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, GENETICS. Applications are invited for a tenure-track position in the Genetics Department at the University of Washington. Applicants must be strongly motivated toward research in eukaryote genetics and must be qualified to supervise graduate student training and to teach genetics. We are especially interested in research programs that combine genetic and molecular approaches to developmental biology. While primary consideration will be given to candidates who have just completed their postdoctoral research training, exceptionally well-qualified individuals with additional experience will be considered for an appointment at a level beyond starting assistant professor. To apply, send curriculum vitae, list of publications, and a brief statement of research interests (three pages or less) and, in addition, have three letters of recommendation sent to:

**Professor Benjamin D. Hall, Chairman
Genetics Department SK-50
University of Washington
Seattle, Washington 98195**

The University of Washington is an Equal Opportunity Employer with an Affirmative Action Policy.

The University of Maryland School of Pharmacy announces the availability of a full-time, tenure-track **ASSISTANT PROFESSOR** position in the **Department of Pharmacology and Toxicology** in 1983. A doctorate in pharmacology is required, and at least 2 years of postdoctoral experience is desired. The successful applicant should have a strong commitment towards excellence in teaching and should be able to develop and maintain a viable research program. Teaching responsibilities include participation in undergraduate courses in human anatomy-physiology and pharmacology and graduate pharmacology courses, as well as participation in graduate research. Send application letter outlining teaching experience, research interests and goals, curriculum vitae, and the names and addresses of three references to:

**Myron Weiner, Ph.D.
Search Committee Chairman
Department of Pharmacology and Toxicology
University of Maryland School of Pharmacy
20 North Pine Street
Baltimore, Md. 21201**

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

POSITIONS OPEN

BROWN UNIVERSITY. ASSISTANT PROFESSOR OF PSYCHOLOGY with specialization in behavioral neuroscience. Tenure-track appointment, initially for 3 years beginning 1 July 1983. Preference will be given to candidates who have demonstrated excellence in research, especially related to the neurochemical basis of behavior. Responsibilities of the position include teaching and direction of research at the undergraduate and graduate levels, and developing a strong, basic research program. Applicants should include curriculum vitae, copies of research publications, reprints or preprints of scholarly publications, and three letters of recommendation. *Brown University is an Equal Opportunity/Affirmative Action Employer. Applications from women and minority persons are encouraged.* Submit all application materials by 1 December 1982 to: **Dr. J. W. Kling, Chair, Physiological Psychology Search Committee, Walter S. Hunter Laboratory of Psychology, Brown University, Providence, R.I. 02912.**

**DEPARTMENT OF CHEMISTRY
UNIVERSITY OF CALIFORNIA, BERKELEY**

Applications are invited for several anticipated positions at the level of **ASSISTANT PROFESSOR OF CHEMISTRY**, beginning fall 1983. We are interested in outstanding candidates with exceptional promise in teaching and research. Our highest priorities are in analytical, inorganic, biophysical, physical, solid-state, or theoretical chemistry. It is possible that a senior appointment with tenure could be made for a person with outstanding qualifications and sufficient experience.

Candidates should submit curriculum vitae (including a list of publications and a summary of their teaching and research objectives), and request three letters of reference, all to be sent to: **Chairman, Department of Chemistry, University of California, Berkeley, California 94720.** Deadline for receipt of applications is 1 January 1983. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

Position open for **ASSOCIATE IN CARDIOVASCULAR MEDICINE** at Duke Medical Center. Applicant must have M.D. degree or equivalent, and credentials for full license to practice medicine in North Carolina. Applicant must have completed an approved advanced training program in cardiology in addition to at least 3 years of postgraduate training in internal medicine. The position requires at least 2 years experience in cardiovascular research, which must include the use of nuclear imaging techniques in human subjects and experimental animals. Experience in cardiac catheterization and familiarity with the use of hemodynamic measurements during exercise is required. The appointment involves the teaching of medical students and house officers in addition to research and clinical assignments. Minimum salary is \$23,500. Please send curriculum vitae and two letters of recommendation to: **Dr. Joseph C. Greenfield, Jr., Chief, Division of Cardiology, Box 3246, Duke Medical Center, Durham, N.C. 27710.** *Duke University is an Equal Opportunity/Affirmative Action Employer.*

ASSOCIATE IN PHARMACOLOGY. Research associate for NIH-supported work on the physiology and chemistry of carbonic anhydrase-dependent systems in the reproductive tract and in muscle and inner ear. Ph.D. and experience in CO₂ chemistry, ion transport, and metabolism. Salary: \$15,000 minimum; maximum negotiable. Position available 1 November 1982. Send applications by 20 October 1982 to: **Dr. T. H. Maren, Department of Pharmacology, Box J-267, JHMHC, University of Florida College of Medicine, Gainesville, Fla. 32610.** *An Equal Opportunity/Affirmative Action Employer.*

BIOCHEMISTRY. Williams College has an opening for fall 1983 for a 3-year assistant professor position (with the possibility of reappointment and consideration for tenure) in biochemistry (Ph.D. required; postdoctoral experience preferred). Applicants should have a strong commitment to both teaching and research. Teaching duties each semester include complete responsibility for one course with laboratory and supervision of senior research projects. For an exceptionally well-qualified candidate, this appointment may be made at the associate or full professor level. Send résumé, description of research interests for undergraduates, and names of three references to: **Dr. Raymond Chang, Acting Chairman, Department of Chemistry, Williams College, Williamstown, Mass. 01267**, by 29 October 1982. *Affirmative Action/Equal Opportunity Employer. We are especially eager to identify minority and women candidates.*

DIRECTOR LABORATORY FOR LASER ENERGETICS

The University of Rochester is seeking qualified applicants for the position of Director of the Laboratory for Laser Energetics, a research unit within the College of Engineering and Applied Science. The Laboratory, a major laser fusion research center in the United States, has a full time scientific and administrative staff of 80 persons and an annual budget of approximately \$10 million. Revenues are derived from a combination of federal, state, industrial, and private sources. The Director of the Laboratory reports to the Dean of the College of Engineering and Applied Science and frequently interfaces with the Vice President of Campus Affairs and the President of the University. The Director is responsible for management, definition and implementation of the Laboratory's Scientific Program and its administrative support, coordination of University services and resources used by the Laboratory, liaison with the sponsors of the research program and development of new sponsorship for the program.

Qualifications that may prove advantageous to the applicant are a strong technical background and a PhD in science or engineering, experience in research administration in either industry, government or university settings, and demonstrated ability to relate effectively to all three sectors. An appointment for this position is expected to be made on or about 1 January 1983. To apply, send resume with names, addresses and telephone numbers of three professional references to: **Dean Brian J. Thompson, College of Engineering and Applied Science, The University of Rochester, Rochester, New York 14627.** The University of Rochester is an affirmative action, equal opportunity employer.

COLLEGE OF ENGINEERING AND APPLIED SCIENCE



UNIVERSITY OF ROCHESTER

NRL

SUPERINTENDENT ELECTRONICS TECHNOLOGY DIVISION

(\$54,755 to \$61,300)

Current pay limitation is \$58,500 pa.)

This is a Senior Executive Service Position
ES-1 to ES-4

The Superintendent of the Electronics Technology Division plans and directs a broad \$20 million program of basic and applied research in the field of electronics. The majority of the 150 employees of the division are professional scientists and engineers at the post-doctoral level. The division program includes the areas of solid state electronics; materials development; surface physics; microwave components; microelectronic devices research and fabrication; high power microwave generation; basic research in electronic materials, especially semiconductors, cryogenics and studies of magnetic phenomena. The objective of this research is to provide new state-of-the-art devices for experimental use, to search out applications of advanced technologies and to focus on solving problems of military significance in the device field. The Superintendent serves as the Naval Research Laboratory authority on electronic devices and, as such, participates in conferences with officials of the Laboratory, and in contacts with other Government organizations and industrial and university laboratories.

TO APPLY: Interested applicants should contact Mrs. Cynthia Lowell at (202) 767-3030 to obtain application forms and information on procedures for applying. All applications must be postmarked by 29 October 1982.

NAVAL RESEARCH LABORATORY

4555 Overlook Avenue, S.W.

Code 68-031-11 (S)

Washington, D.C. 20375

An Equal Opportunity Employer

U.S. Citizenship Required

J. ROBERT OPPENHEIMER RESEARCH FELLOWSHIPS

Los Alamos National Laboratory announces the competition for the J. Robert Oppenheimer Postdoctoral Fellowships, which become available about midyear. The appointments are designed to foster continuing contacts between the Laboratory and recent recipients of doctoral degrees who show clear and definite promise of becoming outstanding leaders in scientific research areas.

Appointments are considered in many areas of experimental and theoretical physics, chemistry, mathematics, computer science, biology, materials science, environmental health, geoscience, and engineering.

Candidates may be persons completing their doctoral work or finishing a current postdoctoral appointment, as well as junior faculty members seeking support for a period of concentrated research.

Appointments are for two years, with the possibility of renewal for a third year. We provide a stipend of \$36,600 per year (12 months). Fringe benefits are also provided, including incoming travel and moving expenses.

Applications must be submitted by December 15. Following a preliminary review, selected candidates with superior professional qualifications will be asked to collaborate with appropriate Laboratory staff members to prepare a research proposal reflecting the candidate's creativity, interest, and abilities. Final selection of a Fellowship recipient is based on the merits of the proposed research and on the ability and accomplishments of the candidates.

Send resume or application (usually available from placement office) with supporting documents to, or request application from:

Personnel Services Manager
MS P-201, Div. 82-AL
Los Alamos National Laboratory
Los Alamos, NM 87545

University of California

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

An Affirmative Action/Equal Opportunity Employer: Women, minorities, veterans, and handicapped are urged to apply.

POSTDOCTORAL RESEARCH APPOINTMENTS IN SCIENCE AND ENGINEERING LOS ALAMOS NATIONAL LABORATORY

The Los Alamos National Laboratory is seeking candidates for our Postdoctoral Research Program. Appointments are considered in many areas of theoretical and experimental physics, chemistry, engineering, biology, materials science, environmental health, mathematics, and geoscience.

Applicants should have received their doctoral degree within the past three years. The appointments are for one year, renewable for a second year. The annual stipend range is \$22,800 - \$25,200 per year; fringe benefits and moving expenses are provided.

Postdoctoral appointments are awarded through a Laboratory-wide competition. The Selection Committee meets four times a year—in December, February, May, and August. Applications are accepted any time during the year.

Send resume or application (usually available from your placement office) with supporting documents to, or request application from:

Personnel Services Manager
MS P201, Div. 82-AI
Los Alamos National Laboratory
Los Alamos, NM 87545

University of California

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

An Affirmative Action/Equal Opportunity Employer: Women, minorities, veterans, and handicapped are urged to apply.

Biomedical Systems Programmer

Expanding pharmaceutical R & D unit seeks a key technical individual to develop laboratory automation systems. The incumbent's overall responsibility is the specification, design and implementation of computer systems to be used for the real-time collection, reduction and analysis of physiological data. RESPONSIBILITIES:

- Design, implement and maintain data acquisition, analysis, and DBMS software for Pharmacology research.
- Perform systems programming for a DEC VAX 11/750 and PDP 11/23 in DECNET network.

Individual should be highly proficient in FORTRAN and DEC Assembler, possess a good understanding of operating systems (RSX-11 and VMS, preferred), with at least 4 years experience in a research environment.

Berlex Laboratories is a division of Schering A.G., West Germany, which is not affiliated with Schering-Plough of Kenilworth, N.J. Our compensation/benefits package is designed to reward the high achiever. Interested candidates are invited to send their resumes, which must include salary requirements, in confidence, to: P. M. Griffoul, Personnel Administrator, Berlex Laboratories, Inc., 110 East Hanover Ave., Cedar Knolls, New Jersey 07927. An equal opportunity employer M/F.

BERLEX

Laboratories Inc.



National Research
Council Canada

Conseil national
de recherches Canada

1983 RESEARCH ASSOCIATESHIPS

for research in science and engineering in the laboratories
of the NATIONAL RESEARCH COUNCIL OF CANADA.

The National Research Council is Canada's leading federal research organization. NRC's laboratory projects cover most areas of the physical sciences, life sciences and engineering.

A focal point for much of this laboratory research is the Montreal Road complex on the outskirts of Ottawa. Here, an active research community involves some 900 scientists and engineers among its 3,000 employees. Other facilities include the original Sussex Drive laboratories in Ottawa, which date from 1932, as well as regional laboratories in St. John's, Halifax, Montreal, Ottawa, Saskatoon and Vancouver.

Applicants for Research Associateships should have recently acquired a Ph.D. in the natural sciences or a Masters degree in an engineering field or expect to obtain the degree before taking up the Associateship.

Associateships are open to nationals of all countries although preference will be given to Canadians.

Research Associates will be offered appointments to the staff of the National Research Council on a term basis and will be offered salaries and benefits currently available to members of the continuing staff. As a guide, the current Ph.D. recruiting rate is \$27,277 per annum.

The initial appointment will normally be for a two-year term and may be renewed, subject to the Associate's performance and subject to the requirements of the Division.

Applications may be obtained from the Research Associates Office, National Research Council of Canada, Ottawa, Canada, K1A 0R6.

Closing date: 15 December 1982

Canada

POSITIONS OPEN

BENTHIC BIOLOGICAL PROCESSES North Carolina State University, Raleigh

A tenure-track position is available in the Department of Marine, Earth and Atmospheric Sciences at the level of assistant professor. Applications are especially invited from individuals trained in the biological aspects of marine benthic boundary layer processes having interests in: (i) animal-sediment interaction with specific expertise in sedimentary structure or sediment transport; or (ii) chemical dynamics with specific expertise in pore water nutrients or organic geochemistry. A Ph.D. is required. The candidate will be expected to strengthen the graduate teaching and research programs. Applicants should forward a résumé and the names of at least three references to: **Dr. Daniel Kamykowski, Chairman, Search Committee, P.O. Box 5068, North Carolina State University, Raleigh, N.C. 27650.** Application materials should be sent by 15 November 1982. *North Carolina State University is an Equal Opportunity/Affirmative Action Employer.*

BIOCHEMIST

Immediate opening for Ph.D. with expertise in enzyme biochemistry to work with proteases. Post-doctoral research experience preferred. Submit curriculum vitae to: **Director of Research and Development, Genetic Diagnostics Corporation, Box 2100, Great Neck, N.Y. 11022.**

BIOCHEMISTRY FACULTY POSITIONS UNIVERSITY OF ARIZONA

The University Department of Biochemistry is seeking two tenure-track faculty members to be housed in newly constructed laboratories now occupied by the department. The prime criterion for appointment will be demonstrated (or potential for) excellence in research and teaching. At least one of the appointments will probably be at the assistant professor level; among equally qualified candidates, the areas of molecular biology or metabolic control will be preferred.

Candidates should send curriculum vitae, a one- or two-page summary of future research plans, and three letters of recommendation to: **Dr. F. Raymond Salemme, Search Committee, University Department of Biochemistry, Biosciences West, University of Arizona, Tucson, Ariz. 85721.** Deadline for applications is 31 December 1982. *An Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.*

BIOENGINEERING/ELECTRICAL ENGINEERING, UNIVERSITY OF UTAH. Applications are invited for a joint tenure-track position in the Departments of Bioengineering and Electrical Engineering. Applicant should have an earned doctorate. The appointee will teach courses in both bioengineering and electrical engineering, and is expected to conduct an outstanding independent program of research. Send curriculum vitae, three recent publications, and the names of three references to: **Dr. Carl Durney, Chairman, Search Committee, Electrical Engineering Department, University of Utah, Salt Lake City, Utah 84112.** Applications will be screened 31 December 1982. *An Equal Opportunity Employer.*

BOTANIST—Tenure-track position at assistant professor level to begin fall semester 1983. Duties include teaching general botany, participation in general biology, and development of advanced courses in area of specialization. The candidate must be capable of developing a strong research program. Preference will be given to applicants with an interest in plant cell biology, plant physiology, or phycology, with a quantitative background desired. Send curriculum vitae, statement of interests and goals in both teaching and research, transcripts, and three letters of recommendation by 31 October 1982 to: **Dr. Glenn C. Kroh, Department of Biology, Texas Christian University, Fort Worth, Texas 76129.** *An Equal Opportunity/Affirmative Action Employer.*

DEPARTMENT OF BIOLOGY CASE WESTERN RESERVE UNIVERSITY

A faculty position at the junior or senior level is available starting September 1983, in the area of **CELL AND MOLECULAR BIOLOGY.** Applicants with research interests in plant sciences are strongly encouraged to apply. Candidates should have a strong commitment to research and undergraduate and graduate education. Interested persons should submit curriculum vitae plus a statement of current research interests, and have three letters of recommendation sent to: **Dr. Norman B. Rushforth, Chairman, Department of Biology, Case Western Reserve University, Cleveland, Ohio 44106.** *Case Western Reserve University is an Equal Opportunity Employer.*

POSITIONS OPEN

ENDOWED CHAIR IN OPHTHALMOLOGY

The Department of Ophthalmology and the Jules Stein Eye Institute, University of California, Los Angeles (UCLA), School of Medicine, are seeking applicants for a recently established **PROFESSORSHIP OF OPHTHALMOLOGY**. Individuals dedicated to a career in vision research and teaching are encouraged to apply. The Search Committee favors candidates with special expertise in molecular biology of the retina and other tissues of the eye. Of particular interest is a scientist committed to applying the techniques of molecular biology to the human eye and to experimental models of human eye disease.

Applications, including curriculum vitae, bibliography, and letter discussing career goals, should be submitted to:

Joseph Horwitz, Ph.D.
Chairman, Search Committee
Jules Stein Eye Institute
UCLA School of Medicine
Los Angeles, California 90024

UCLA is an Equal Opportunity/Affirmative Action Employer.

CHEMICAL ENGINEERING AND PUBLIC POLICY

The Department of Chemical Engineering and the Department of Engineering and Public Policy at Carnegie-Mellon University are seeking a candidate for a joint appointment. Candidates must have strong credentials in Chemical Engineering and demonstrated research ability in the area of public policy. Areas of particular research interest include environmental systems and control, toxic substances, issues of safety and risk in process design, products liability, productivity and industrial automation, and regulatory issues in coal conversion technologies. Send résumé, list of publications, and names of three references to:

Dr. M. Granger Morgan
Department of Engineering and
Public Policy
Carnegie-Mellon University
Pittsburgh, Pa. 15213

DIRECTOR, Program in Appropriate Alternative Technology. Person with expertise and education in integration of alternative energy and agricultural components in a research and demonstration facility. Must possess communication, management, and organization skills; will serve as administrative leader for a 50-acre rural site. Salary commensurate with ability. Term of service: 6 months to 1 year minimum. Closing date: until position is filled. Send résumé and names of three references to: **Dr. Paul Risser, Chief, Illinois Natural History Survey, Natural Resources Building, 607 East Peabody Drive, Champaign, Ill. 61820.**

Equal Opportunity Employer

ENDOCRINOLOGIST—Assistant professor (tenure-track), working in areas such as molecular mechanisms of hormone action, including recombinant DNA techniques, factors regulating growth and development, and neuroendocrinology. The successful applicant will be expected to develop a vigorous research program, and to teach at undergraduate and graduate levels. Requirements are a doctor of philosophy degree or equivalent, demonstrated research ability in his/her area of interest, and strong prospects for funding of the research program. Postdoctoral experience is highly desirable. Applicants should submit detailed curriculum vitae, three letters of recommendation, and a letter describing their research interests to: **Dr. James Redmond, Chairman, Search Committee, Department of Zoology, Iowa State University, Ames, Iowa 50011.** Application deadline: 1 November 1982, or until filled.

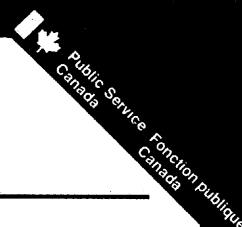
GENETICIST/MOLECULAR GENETICIST

The Genetics Department at Iowa State University welcomes applications for one, and possibly two, tenure-track, 12-month faculty positions which require both teaching and research. Rank and salary (\$30,000 minimum) will be commensurate with qualifications and experience. Preference will be given to candidates with both a strong background in general genetics and competence in recombinant DNA techniques. Send curriculum vitae, summary of research interests, and three letters of recommendation by 30 October to: **Joan Stadler, Department of Genetics, Iowa State University, Ames, Iowa 50011.**

Affirmative Action/Equal Opportunity Employer

The Public Service of Canada is
an equal opportunity employer

La Fonction publique du Canada offre
des chances égales d'emploi à tous



Research Scientist Arctic Marine and Anadromous Fishes

Salary: \$23,225 – \$43,200

Ref. No.: 82-NCRSO-DFO-2 (4030)

**Fisheries and Oceans
Arctic Biological Station
Ste-Anne-de-Bellevue, Quebec**

The Arctic Biological Station, Ste-Anne-de-Bellevue, requires a Research Scientist to carry out field and laboratory studies on arctic and anadromous fishes.

Duties

Studies will be aimed at understanding the processes of arctic marine ecosystems as a basis for providing advice on the potential effects of hydro development and non-renewable resource development on marine and anadromous fish species and their habitat, and on the size of stocks and yields of exploited and potentially exploitable species.

Qualifications

Graduation with an acceptable doctorate degree from a recognized university in fisheries science, zoology or physiology, or a lesser degree with research experience and productivity equivalent to that of a doctorate degree. Evidence of authorship of published or unpublished reports or papers resulting from research in fisheries, aquatic ecology or fish physiology. Experience in conducting scientific studies independently or as part of a research team, and in supervising technical personnel.

Language requirements

The successful candidate will be working to a significant degree in both English and French. Bilingual persons, as well as unilingual persons who are willing to undertake language training and who can demonstrate the necessary aptitude to become bilingual, are invited to apply.

Conditions of employment

Willingness to conduct research in remote arctic localities from small boats and vessels under rigorous physical conditions, often at some personal discomfort.

A bank of candidates will be established in order to staff other similar positions in Quebec City, Quebec and in Moncton, New Brunswick.

Clearance Number: 212-134-017

Additional job information is available by writing to the address below:
Tout renseignement relatif à ce concours est disponible en français et peut être obtenu en écrivant à l'adresse suivante:

How to apply

Send your application form and/or résumé to:

**Rachel Boisvert
National Capital Region Staffing Office
Public Service Commission of Canada
300 Laurier Avenue West
Ottawa, Ontario K1A 0M7
Canada
Tel.: (613) 593-5331 ext. 485**

Please quote the applicable reference number at all times.

Canada

POSITIONS OPEN

The Department of Geosciences is seeking a **GEOL-OGIST** to teach introductory courses, geomorphology or mineralogy, and to assist, on a rotational basis, with Summer Field Camp in New Mexico or Colorado. There will be an opportunity to offer courses in the area of specialty in the Graduate Program (M.S.). The position is tenure-track at the assistant professor level; begins January 1983. The department has 240 undergraduates and 45 graduate students. Application deadline is 31 November 1982. Send a letter of application, résumé, and the names of three references to: **Search Committee, Department of Geosciences, Northeast Louisiana University, Monroe, La. 72109. An Equal Opportunity/Affirmative Action Employer.**

GLYCOPROTEIN CHEMIST Ph.D.

Expertise in protein isolation chemistry, HPLC, RIA, AA sequencing. Salary negotiable. Research faculty appointment. Send curriculum vitae, bibliography, and letters of reference to: **C. M. Loeb, Administrator, University of California, Los Angeles, Medical School, Room A3-34, 1000 Veteran Avenue, Los Angeles, Calif. 90024. An Equal Opportunity Employer.**

HISTOLOGY LABORATORY INSTRUCTORS

St. George's University, Grenada, requires two laboratory instructors in histology. Dr. M. N. Golarz is professor of histology. Six months, 1 year, or longer contracts acceptable. Return air fare provided. Begin 1 January 1983. Apply as soon as possible to: **Vice Chancellor, St. George's University School of Medicine, Grenada, West Indies.**

HUMAN NUTRITIONIST

The Department of Nutritional Sciences at the University of California, Berkeley, seeks to appoint a **nutritionist** to devote full-time to research in the Experiment Station. The appointee is expected to carry out independent research and can be a principal investigator on research grants. The appointee should have a Ph.D. and/or M.D. degree and a well-established research program. Formal training in areas in addition to nutrition would be welcomed. Submit, by 1 January 1983, a letter with curriculum vitae, names of three referees, and publication list (including theses) to: **Dr. L. F. Bjeldanes, Department of Nutritional Sciences, University of California, Berkeley, Calif. 94720.**

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

ICHTHYOLOGIST

The Academy of Natural Sciences has an endowed research opening for an ichthyologist, preferably at the level of associate curator or curator. Preference will be given to candidates with a demonstrated commitment to collection-oriented research on the systematics of fish; superb library and laboratory facilities and NSF-supported collections of fish come with the position. Experience in program development is desirable. Salary negotiable in relation to rank and experience.

Please send letter of research interest, curriculum vitae, and names of three references to:

**Dr. Frank B. Gill
Chairman, Fish Search Committee
The Academy of Natural Sciences
19th and the Parkway
Philadelphia, Pa. 19103**

Closing date: 31 December 1982.

An Equal Opportunity Employer; women and minorities encouraged to apply.

Corrected Advertisement

MICROBIAL GENETICS/MOLECULAR VIROLOGY INDIANA UNIVERSITY-BLOOMINGTON

The Department of Biology will appoint a tenure-track assistant professor during the 1982-1983 academic year. Applicants will be expected to develop a strong research program in the areas of microbial genetics or molecular virology. The successful candidate will be expected to supplement and extend existing strengths in microbiology, molecular biology, and molecular genetics. Undergraduate teaching responsibilities will be in the area of microbial/molecular genetics. Send a résumé, including a description of research accomplishments and future plans and representative publications, and arrange for three letters of reference to be sent to: **Dr. Rollin C. Richmond, Chairman of Biology, MGMV Search, Indiana University, Bloomington, Ind. 47405, by 1 November 1982. Indiana University is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

IMMUNOLOGY Ph.D. wanted. University of Washington seeks Ph.D. in immunology. Must be trained in basic complement research with experience in isolation, purification, and quantitation of human and animal complement components. Individual must have own grant and salary support. Experience in research on immunologic renal disease desired. Reply to: **Dr. William G. Couser, Head, Division of Nephrology, Box RM-11, University of Washington, Seattle, Wash. 98195.**

QUIDEL

MOLECULAR BIOLOGISTS AND IMMUNOLOGISTS

QUIDEL, a growing biotechnology firm specializing in diagnostic and therapeutic pharmaceuticals, announces immediate openings for qualified individuals at the staff scientist and research assistant levels.

RESEARCH SCIENTISTS:

- 1) **Immunologists**—Ph.D.'s with strong backgrounds in either immunochemistry and protein chemistry, development of hybridomas and experience in cell culture techniques, or preparation, purification, and analysis of lymphokines.
- 2) **Molecular Biologists**—Ph.D.'s with experience in either recombinant DNA technology including plasmid and phage vector systems, nucleotide sequencing and construction of expression vehicles, or in microinjection techniques.

RESEARCH TECHNICIANS:

B.S. or M.S. degree holders with prior laboratory experience in either biochemistry and/or immunochemistry, tissue culture, hybridoma development and characterization, cellular immunology, molecular biology, or virology.

QUIDEL is located in La Jolla, California, in new, modern, fully equipped facilities. Salaries are competitive and negotiable, depending on experience, and the fringe benefit package is attractive, including eligibility to participate in a stock option plan. Send curriculum vitae, bibliography, and names of three professional references to: **QUIDEL, Bonnie L. Elbik, Administration, 11077 North Torrey Pines Road, La Jolla, California 92037. Affirmative Action/Equal Opportunity Employer.**

MOLECULAR/MICROBIAL GENETICIST

Assistant professor, tenure-leading, August 1983. Conduct an active research program on molecular aspects of gene organization, gene replication, or gene expression and participate in microbiology/molecular biology teaching program. Ph.D. and 2 years of postdoctoral experience in the fields of molecular biology or microbiology required. Joint/split appointments considered. Salary competitive, with research initiation funds available. Send curriculum vitae, statement of research interests, and three letters of reference by 1 November to: **Dr. Kenneth W. Nickerson, School of Life Sciences, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0118. Affirmative Action/Equal Opportunity Employer.**

NMR IMAGING SCIENTIST. Will develop and evaluate NMR imaging techniques, use phantoms and simulations for critical evaluation of imaging apparatus, work with medical research team on the imaging of animals and humans. Ph.D. physical scientist with excellent knowledge of NMR theory, experiment, practical skills in NMR instrumentation. Some experience in NMR imaging desirable. Send résumé to: **Dr. L. J. Neuringer, Massachusetts Institute of Technology, Francis Bitter National Magnet Laboratory, Cambridge, Mass. 02139. An Equal Opportunity/Affirmative Action Employer.**

PHYSIOLOGY/PHARMACOLOGY

Applications are invited for three faculty positions available immediately. Candidates must have a Ph.D. or equivalent. One position is for teaching physiology (50 percent respiratory physiology). The second position requires a broad-based training in medical pharmacology and toxicology to teach toxicology (50 percent) plus other pharmacology topics. The third position is for teaching neuropharmacology. Research interests are open. Rank and salary dependent upon qualifications. Teaching responsibilities involve medical, podiatric, and physician assistant training programs. Send curriculum vitae and names of three references to: **William J. Dyche, Ph.D., Associate Dean of Pre-Clinical Affairs, University of Osteopathic Medicine and Health Sciences, 3200 Grand Avenue, Des Moines, Iowa 50312. Equal Opportunity Employer.**

POSITIONS OPEN

ORGANIC CHEMISTRY. A tenure-track position is available for September 1983. This appointment is expected to be made at the assistant professor level, but exceptional candidates at other levels will be considered. Preference will be given to candidates in the field of organometallic chemistry. Strong interests and potential of excellence in both teaching and research are expected. Applications will be accepted up to 15 November 1982. Send résumé, three letters of recommendation, and summary of research plans to: **Dr. T. P. Fehlner, Department of Chemistry, University of Notre Dame, Notre Dame, Ind. 46556. The University of Notre Dame is an Equal Opportunity/Affirmative Action Employer.**

PLANT CELL/MOLECULAR BIOLOGIST. Tenure-track position at assistant professor level to begin about 1 July 1983. This position is one of several in a newly created Department of Biology. Postdoctoral experience and demonstrated potential for excellence in research required. Send résumé, including a one-page statement of specific research plans, reprints, and the names and addresses of at least three references to: **Plant Cell/Molecular Biology Search Committee, Department of Biology, Wilson Hall (046A), University of North Carolina, Chapel Hill, N.C. 27514, by 31 December 1982. The University of North Carolina is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL CHEMIST to synthesize dyes which will bind and measure calcium inside cells. Such dyes will be new analogs of those in *Biochemistry* 19, 2396 (1980), and will aid fundamental investigations in neurobiology and immunology. Expertise in organic synthesis essential. Experience with dyes, photochemistry, or aromatic systems would be helpful. Opportunities will be provided to learn neurobiological and immunological techniques. Salary available to at least June 1985. Applicants should send résumé and arrange for three recommendations to be sent to: **Dr. Roger Tsien, Department of Physiology-Anatomy, University of California, Berkeley, Calif. 94720, by 1 November 1982. The University of California is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL FELLOW—RESEARCH ASSOCIATE POSITION, available immediately for Ph.D. with expertise and interest in enzyme isolation and characterization to join group study in removal of blood group antigens from the red cell surface. Send curriculum vitae and names of three references to: **Dr. J. Goldstein, Head, Cell Bio-Chemistry Laboratory, Lindsley F. Kimball Research Institute, NEW YORK BLOOD CENTER, 310 East 67 Street, New York, N.Y. 10021. An Equal Opportunity Employer, M/F.**

POSTDOCTORAL POSITION

Position available for M.D. or Ph.D. in biological sciences with group working in area of developmental lung metabolism and developmental biochemistry. Areas of interest include carbohydrate-lipid interactions, phospholipid metabolism, hormone and growth factor influences on cultured type II cells, and influences of oxygen toxicity on lung metabolism and phospholipid synthesis. Salary: \$18,000 to \$24,000, depending on experience. Send curriculum vitae and names of references to: **Joseph B. Warshaw, M.D., Department of Pediatrics, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available in protein chemistry and affinity labeling of purine nucleotide sites in enzymes. Recent Ph.D. in biochemistry. Send résumé and names of three references to: **Dr. Roberta F. Colman, Chemistry Department, University of Delaware, Newark, Del. 19711. An Equal Opportunity/Affirmative Action Employer.**

VETERINARIAN or PHYSICIAN with interest and experience in immunology to assume medical responsibility for growing colony of 150 chimpanzees located at the Liberian Institute for Bio-Medical Research, Robertsfield, Liberia. Carry out independent and collaborative research on immunology of parasites or viruses. Current research. Interests of laboratory are in areas of hepatitis viruses and onchocerciasis. Research facilities include RIA, EIA, lymphocyte culture, immunofluorescence, EM. Please send résumé and letter indicating interests and career goals to: **Alfred M. Prince, M.D., Lindsley F. Kimball Institute, NEW YORK BLOOD CENTER, 310 East 67 Street, New York, N.Y. 10021. An Equal Opportunity Employer, M/F.**

New England Biolabs, Inc. will be expanding its staff during 1982-1983 with positions available at the following levels:

POSTDOCTORAL POSITIONS

Available in October, 1982 to individuals experienced in cloning either eukaryotic or prokaryotic genes.

B.S. or M.S. LEVEL

Positions are immediately available to individuals with several years experience in various areas of molecular biology such as protein purification, viral DNA isolation, DNA sequencing, enzymology and microbiology.

Applicant should send curriculum vitae to: Personnel Director, New England Biolabs, Inc., 32 Tozer Road, Beverly, MA. 01915, USA.



U.S. DEPARTMENT OF ENERGY RESEARCH FACILITIES

Energy Related Research Opportunities

Select U.S. Department of Energy (DOE) research facilities invite applications from qualified faculty, post-graduate, graduate, and undergraduate students. Faculty and student appointments are for the summer; postgraduate and graduate student appointments are for one year.

The unique and advanced facilities for research participation and training include the following: Atmospheric Turbulence and Diffusion Laboratory, Oak Ridge Associated Universities, and Oak Ridge National Laboratory, all in Oak Ridge, Tennessee; Bartlesville Energy Technology Center, Bartlesville, Oklahoma; Center for Energy and Environmental Research, Puerto Rico; Morgantown Energy Technology Center, Morgantown, West Virginia; Pittsburgh Energy Technology Center; Pittsburgh Mining Technology Center, Pittsburgh, Pennsylvania; Savannah River Ecology Laboratory and Savannah River Laboratory, both in Aiken, South Carolina.

Information and application materials may be obtained from

DOE Laboratory-University Cooperative Programs University Programs Oak Ridge Associated Universities P.O. Box 117 Oak Ridge, Tennessee 37830



This is an equal opportunity program open to qualified persons without regard to race, sex, creed, color, handicap, or national origin. The program is open to U.S. citizens and permanent resident aliens.

DEAN OF THE MEDICAL SCHOOL

The University of Michigan is seeking nominations and applications for the Deanship of the Medical School. The Dean is the chief academic and administrative officer of the School and reports directly to the Academic Vice President. Nominees and applicants must hold an M.D. or Ph.D. degree in a health related science, demonstrate scholarly distinction appropriate for a tenured appointment in the School, have an understanding of the mission of a medical school in a complex research university, and have demonstrated administrative ability. Nominations and applications should be postmarked no later than December 31, 1982 and should be sent to: Robert P. Kelch, M.D., Chairman, Medical School Deanship Committee, The University of Michigan, Office of the Vice President for Academic Affairs, 3070 Fleming Administration Building, Ann Arbor, Michigan 48109



The University of Michigan

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DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE NATIONAL INSTITUTES OF HEALTH NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

Opening Date: October 1, 1982 Closing Date: November 12, 1982

(All applications must be post-marked by the closing date.)

DIRECTOR... DIVISION OF LUNG DISEASES

The National Heart, Lung, and Blood Institute is recruiting a Director for its Division of Lung Diseases. The Director will coordinate the planning, management, and evaluation of a major program of basic and targeted research, cooperative clinical trials, education and demonstration projects, and national lung centers. The Division itself is divided into six major programs, with a staff of approximately 30 employees and a current annual budget in excess of \$80 million.

This is a Civil Service position in the Senior Executive Service (SES), with base salary from \$54,755 to \$61,300 per year depending on qualification. Currently, the payable salary is limited to \$58,500. Physicians may be eligible for a comparability allowance up to \$10,000 per year. (Alternatively, 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 Senior Executive Service, must serve a one year probationary period. Mandatory professional/technical qualifications are a medical degree, or education in biomedical science and research and/or clinical experience in the field of lung diseases. Further information on these qualifications available by contacting Kathryn Osbourn, Personnel Management Specialist, National Institutes of Health, National Heart, Lung, and Blood Institute, Building 31, Room 5A-32, Bethesda, MD 20205, (301) 496-6477.

Mandatory managerial/executive qualifications include evidence of management of a basic or clinical research program, demonstrating ability to assume leadership responsibilities in developing program goals; representing the program to outside groups; directing program planning, execution, and evaluation; and conducting a fair and equitable employment program, including the attainment of EEO objectives.

Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the degree to which they exceed the mandatory managerial/executive qualifications, and on the following desirable qualifications: scientific reputation/peer recognition; training and education in lung diseases; leadership of a basic or clinical research, or research administration program, and honors and awards indicative of outstanding contributions to the field of lung diseases.

Applications (Personnel Statement of Qualification—SF-171) should be sent to Dr. Jay Moskowitz, Chairman, DLD Director Search Committee, Building 31, Room 5A03, National Institutes of Health, Bethesda, MD 20205, telephone (301) 496-6331.

A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

**THE NATIONAL INSTITUTES OF HEALTH IS AN
EQUAL OPPORTUNITY EMPLOYER.**

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RESEARCH OPPORTUNITIES

Competitive visiting scholar awards for one or two years tenure in selected federal laboratories throughout the United States. Opportunities are available for specialized experimental or theoretical research experience—free of interruptions and distractions of other duties—in the general fields of:

**ATMOSPHERIC & EARTH SCIENCES
LIFE & MEDICAL SCIENCES
ENGINEERING • PHYSICS • CHEMISTRY
ENVIRONMENTAL SCIENCES
MATHEMATICS • SPACE SCIENCES**

Most of the 18 programs are open to U.S. and non-U.S. nationals, and most are open to experienced senior investigators as well as to recent Ph.Ds.

Application materials with details on research opportunities and laboratory locations may be requested by letter, stating the specific area of research interest, to:

Associateship Programs (JH 610-S2)
NATIONAL RESEARCH COUNCIL
2101 Constitution Avenue
Washington, D.C. 20418

National Academy of Sciences
National Academy of Engineering • Institute of Medicine

NIOSH NBS

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U.S. DEPARTMENT OF ENERGY

Fossil Energy Research Opportunities

Faculty and Graduate Students

Energy Technology and Mining Centers

The U.S. Department of Energy (DOE) technology and mining centers in Bartlesville, Oklahoma; Pittsburgh, Pennsylvania; and Morgantown, West Virginia, invite applications from qualified faculty members and graduate students. The unique and advanced facilities and the state-of-the-art research and development programs provide challenging opportunities for research participation for the summer of 1983 and sabbatical leaves.

Information and application materials may be obtained from

Fossil Energy Research Opportunities

University Programs

Oak Ridge

Associated Universities

P.O. Box 117

Oak Ridge, Tennessee 37830



This is an equal opportunity program open to qualified persons without regard to race, sex, creed, color, handicap, or national origin. The program is open to U.S. citizens and permanent resident aliens.

POSITIONS OPEN

POSTDOCTORAL POSITION IN NEUROPHYSIOLOGY

New electrophysiological techniques are being applied to studies of synapse formation and synaptic plasticity in networks formed by cultured neurons. Culture dishes with integral microcircuits are being used for extracellular stimulation and recording [*J. Neuroscience Meth.* 2, 19-31 (1980)]. Voltage-sensitive membrane-bound fluorescent dyes will also be used. Background in conventional electrophysiology, developmental neurobiology, or cell culture would be valuable. Position available immediately or no later than January 1983. Please send a short letter, describing research interests, curriculum vitae, and names and addresses of three references to: Dr. Jerome Pine, 256-48 California Institute of Technology, Pasadena, California 91125.

POSTDOCTORAL POSITIONS available to study regulation of enzymes in polyisoprenoid pathways in mammalian systems. Experience in tissue culture, enzyme assays, protein purification, and immunochemical analyses useful. Send résumé and references to: Dr. Harry Rudney, Department of Biological Chemistry (522), College of Medicine, University of Cincinnati, 231 Bethesda Avenue, Cincinnati, Ohio 45267.

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POSTDOCTORAL POSITION AVAILABLE immediately to study (i) regulation of phosphotyrosyl-protein phosphatases involved in Rous sarcoma virus induced cellular transformation and (ii) regulation of phosphotyrosyl-protein phosphatases involved in hormonal control of glycogen metabolism. Prefer recent Ph.D. in biochemistry with strong enzymology background. Please send curriculum vitae and three letters of recommendation to: Dr. Heng-chun Li, Department of Biochemistry, THE MOUNT SINAI SCHOOL OF MEDICINE OF THE CITY UNIVERSITY OF NEW YORK, One Gustave L. Levy Place, New York, N.Y. 10029. *An Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS IN BIOCHEMICAL PHARMACOLOGY—TOXICOLOGY. Well-equipped training facility. Research in regulation of heme biosynthetic and drug metabolizing enzymes in hepatic, brain, and endocrine tissues by drugs, toxicants, and hormones. Send curriculum vitae and three letters of reference to: Dr. W. N. Piper, Department of Pharmacology, University of Nebraska Medical Center, Omaha, Nebraska 68105. *The University is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN ENZYMOLOGY available beginning between 1 October 1982 and 1 March 1983 for research related to pyruvate, orthophosphate dikinase isolated from photosynthetic bacteria and corn leaves (for example, reaction mechanism, reversible light activation, comparative physicochemical properties); \$13,000 to \$14,000 per year, for 2-year position. Send résumé and names of three references to: Dr. R. Chollet, Department of Agricultural Biochemistry, University of Nebraska—Lincoln, Lincoln, Neb. 68583-0718. Telephone: 402-472-2936. *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately in laboratory which studies cell biology, biochemistry, immunology, and host defenses against two important human parasite protozoa, *Giardia lamblia* and *Entamoeba histolytica*. Send letter, curriculum vitae, publications, and names and telephone numbers of three references to: Dr. Frances Gillin, Division of Infectious Diseases, University of California Medical Center, 225 Dickinson Street, San Diego, Calif. 92103. Telephone: 714-294-6146.

POSTDOCTORAL POSITION available for 2 years to study trypanosome antigens and their roles in provoking immune responses and resistance. Send résumé and letters of recommendation to: Dr. D. G. Dusanic, Department of Life Sciences, Indiana State University, Terre Haute, Ind. 47809. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE

Available immediately for genetic and physiological studies on anaerobic bioconversion of gases to fuels and chemicals. A background in microbial genetics and biochemistry preferred. Salary competitive. Send résumé and three letters of reference to: Dr. Harold L. Drake, Microbial Physiology Laboratories, Department of Biology, University of Mississippi, University, Miss. 38677. *Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATE position. Extensive experience with CNS, extracellular, single neuron recording and a good knowledge of CNS neuroanatomy will be required for this project on the processing of activity in sympathetic preganglionic neurons with special reference to cardiovascular control. A complete neurophysiological laboratory is available, including a complete computer facility and apparatus for iontophoresis and pressure injection. The position will be open on 1 July 1983. Candidates should send curriculum vitae and a brief letter describing their interest in central autonomic regulation to: Dr. Lawrence P. Schramm, Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, 720 North Rutland Avenue, Room 226, Baltimore, Md. 21205.

POSTDOCTORAL RESEARCHERS. Five postdoctoral scientists will be appointed to our staff about 1 January 1983 for an initial period of 1 year. Minimum salary for first year is \$17,000 with consideration made for prior relevant, postdoctoral experience. Positions are: (i) **Psychologist/Psychopharmacologist** under supervision of Dr. Irving Geller, director of our Behavioral Pharmacology Department, to participate in studies concerned with the mechanism of drug behavior interactions. Requires dissertation research in operant conditioning with at least 1 year relevant postdoctoral experience desired. (ii) **Peptide Chemist** under supervision of Dr. P. N. Rao, director of our Organic Chemistry Department, to study isolation of brain peptides. (iii) **Cell/Molecular Biologist** under supervision of Dr. Sydney A. Shain, director of our Cellular and Molecular Biology Department, to participate in studies concerning hormonal regulation of gene expression in aging and neoplasia. Requires experience in immunology and in vitro translation of messenger RNA. (iv) **Biological Anthropologist/Zoologist/Comparative Psychologist**, under supervision of Dr. Anthony M. Coelho, Jr., in our Behavioral Medicine Laboratory, to study the contributions of behavior patterns and social stress to heart disease in socially living nonhuman primates. (v) **Immunologist** with a strong background in genetics to work on developing the MHC of a marsupial under the supervision of Professor W. H. Stone in our Genetics Department. Interested candidates should respond by 1 November 1982 to: Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284, referring to position by number. Include curriculum vitae, a description of research interests, and names of three references, including major professor, in initial correspondence. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL TRAINING POSITIONS are available for qualified candidates interested in blood coagulation, fibrinolysis, thrombosis, and hemostasis. Training is offered in several disciplines including biochemistry, cell biology, pharmacology, and physiology to study the role in thrombogenesis of plasma factors, platelets, megakaryocytes, and vascular cells. The goals are to explain etiology and pathogenesis of human thrombotic and hemorrhagic disease and to develop new diagnostic and therapeutic measures. The interested candidates must have fulfilled Ph.D. or M.D. training and be citizens or permanent residents of the United States. Positions are offered for up to 3 years. Salary is commensurate with the NIH guidelines for postdoctoral trainees, plus an institutional supplement. Send application and curriculum vitae to: Dr. Andrei Budzynski, Thrombosis Research Center, Temple University School of Medicine, Philadelphia, Pa. 19140. *Affirmative Action/Equal Opportunity Employer.*

PROFESSOR OF HEALTH AND MEDICAL CARE ORGANIZATION

Emphasis on analysis and policy formulation for improvement of public sector role. Ability to offer courses and seminars for master's and doctoral students, and substantive consultation to faculty and students in developing areas of delivery systems, finance systems, manpower deployment schemes, and provider and client roles. Doctoral degree in an academic or professional area relevant to health and medical care, preferably in medicine, and preference for a second relevant graduate degree. Salary is negotiable. Send curriculum vitae, selected publications, at least three letters of reference, and a statement indicating how you match the specifications of the position by 1 November 1982 to: Chairperson, Department of Social and Administrative Health Sciences, School of Public Health, 403 Earl Warren Hall, University of California, Berkeley, California 94720. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

Electrophysiologist/ Neuropharmacologist

The Upjohn Company currently has an opening for an electrophysiologist/neuropharmacologist to assist a creative research group in studying the effects of new drugs on single neurons within the brain and spinal cord.

A B.S. or M.S. in a biomedical science is required. The successful candidate will use the techniques of microelectrode recordings and microiontophoresis and will collect and analyze data and write summaries of the results. At least 1 year of experience in stereotaxic surgery or neurosurgery is required. Exposure to pharmacology, microelectrode recording, electronics, computer science, or statistics is desirable.

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

For confidential consideration, please send your resume and transcripts to:

Lance D. Williams—14516
5044-41-1

Upjohn

The Upjohn Company
7000 Portage Road
Kalamazoo, Michigan 49001

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Industrial Microbiologist — PhD

● Southern Location

Ethyl Corporation, a Fortune 500 company with laboratories located in Baton Rouge, Louisiana, is seeking an innovative individual to join our expanding Biological Processes 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 microbiological research. 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 a biological process.

Baton Rouge is located 80 miles northwest of New Orleans on the Mississippi River, where the climate is extremely favorable and the cost of living among the very lowest. In addition to an excellent opportunity for professional recognition and growth, Ethyl offers a comprehensive salary/benefits package and an attractive working environment. For confidential consideration, please send detailed resume with salary requirement to:

MR. A. J. ROBICHAUX, Recruiting Supervisor

Ethyl

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CORPORATION
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Baton Rouge, LA 70821

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Theoretical High Energy Physicists

The High Energy Physics Division of Argonne National Laboratory is seeking candidates for staff positions in theoretical elementary particle physics. The Division has substantial activities in both theoretical and experimental high energy physics and wishes to broaden its research program. Other important basic research at the Laboratory includes effort in condensed matter and nuclear physics. Applicants should have a strong record of originality in research. The level of the appointments will be based on qualifications. Applicants are asked to send biographical data, a list of publications, and names of professional references to Dr. E. L. Berger, High Energy Physics Division, Box 101-55, Argonne National Laboratory, Argonne, Illinois 60439. Closing date for applications is December 1, 1982.



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AAAS Memberships and Subscriptions

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☐ \$140 air-surface delivery via Holland

☐ Payment enclosed ☐ Bill me later

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POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION. A position is available in a laboratory working on mammalian fertilization using monoclonal antibodies to define functional components of sperm. Experience in protein biochemistry and/or cell surface labelling techniques preferred. Available 1 December 1982. Apply by sending curriculum vitae and three letters of recommendation to:

Dr. Patricia M. Saling
P.O. Box 3143
Duke University Medical Center
Durham, N.C. 27710

University School of Public Health and Tropical Medicine seeks the professional services of a **PROFESSOR** to teach tropical medicine (40 percent), research (30 percent), administrative (20 percent), and clinical (10 percent) responsibilities. Must do major teaching in clinical parasitology; research in pathogenesis and control of major parasitic diseases of the tropics. Clinical responsibilities will be to outpatients. Sixteen years of education required, with 6 years of training and 10 years of experience in teaching and research. Forty-hour work week. Salary of \$40,000 per year. M.D. degree required with doctoral-level degree in parasitology; clinical and field experience in Latin America. Contact: **Office of Employment Security, 617 St. Charles Avenue, New Orleans, Louisiana 70130.** Job order number 468643.

TEXAS A & M UNIVERSITY invites applications for the position of **PROFESSOR AND HEAD, DEPARTMENT OF ANIMAL SCIENCE.** This position provides administrative direction of the academic and research programs of the department in the animal and dairy sciences, nutrition, basic food sciences, seafood and meat technologies, as well as statewide subject matter leadership and coordination of Extension and Experiment Station programs in the animal, dairy, and related sciences. Specific responsibilities include leadership for faculty and students to strengthen academic and research programs, and service as the principal liaison with industry groups in the state. The individual should have a Ph.D., professional experience in research and education, and proven abilities of leadership and communication in those areas. Applicants should send curriculum vitae and names of at least three references to: **H. O. Kunkel, College of Agriculture, Texas A & M University, College Station, Texas 77843.** Texas A & M University and The Texas A & M University System are Equal Opportunity/Affirmative Action Employers.

PROFESSOR OF CHEMICAL ENGINEERING

The G.W.C. Whiting School of Engineering of The Johns Hopkins University invites applications for the position of professor with tenure in the Department of Chemical Engineering. Candidates should have a commitment to teaching and be internationally recognized for research accomplishments in chemical engineering; research areas are open. Established in 1979, the department now has six faculty and a strong emphasis on graduate education and research. Current departmental research areas include molecular thermodynamics, electrochemical engineering, nucleation phenomena, fluid mechanics, biotechnology, separation processes, and process modelling. Applicants should send a résumé and the names of four references by 1 November 1982 to: **The Chairman of the Search Committee, Professor Charles R. O'Melia, Department of Geography and Environmental Engineering, The Johns Hopkins University, Baltimore, Maryland 21218.** The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

DEPARTMENT OF PSYCHIATRY THE CASE WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE CLEVELAND, OHIO

Applications are invited for the **Douglas D. Bond Professorship**, a recently established research chair. Candidate should be at the professorial level with established expertise in biological approaches to the understanding of human behavior and psychiatric disorders. The selected candidate will provide leadership for the department's overall research program and related educational activities. Curriculum vitae and bibliography may be submitted to:

David R. Agle, M.D.
Professor of Psychiatry
2040 Abington Road
Cleveland, Ohio 44106

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

NEUROPHYSIOLOGIST Assistant Professor

Applications and nominations are invited for a tenure-track faculty position in the Department of Physiology. Candidates should have completed postdoctoral fellowship studies and be prepared to initiate an independent research program which will be competitive for extramural support.

Please send curriculum vitae, references, and a brief statement of research plans to:

Dr. Winton Tong
Department of Physiology
University of Pittsburgh
School of Medicine
Pittsburgh, Pennsylvania 15261
An Equal Opportunity/Affirmative
Action Employer

PROGRAM OFFICER, SCIENTIFIC FOUNDATION. The Hudson River Foundation for Science and Environmental Research, a not-for-profit granting institution, is seeking a program officer for its newly endowed program of Hudson River research. Grants under this program are made annually for the support of continuing research on matters of environmental, ecological, and public health concerns. The program officer will administer the grant-making process, will assist the 17-member Hudson River Panel in its work on program development and allocation of research funds, will coordinate proposal reviews, and will monitor the progress of funded research. The program officer will also be responsible for maintaining communications with grant applicants, with Panel and committee members, and with those scientific, government, and public institutions having interests in the resources and natural state of the Hudson River system. Duties extend to such other matters as overseeing the management of archives and assisting the Foundation with dissemination of scientific information. Work location in New York City and Hudson River environs. Candidate should have earned Ph.D. and experience in a field related to the environmental or ecological sciences. Salary negotiable. Submit letter of application, curriculum vitae, and names of at least three referees by 1 November 1982 to: **Ross Sandler, Executive Director, Hudson River Foundation, Suite 4500, 122 East 42 Street, New York, New York 10168.** Telephone: 212-949-0028.

RESEARCH ASSOCIATE: CARDIOVASCULAR PHARMACOLOGIST with relevant 2-year postdoctoral or equivalent experience to work in a preclinical drug development program. Send curriculum vitae and references to: **Department of Pharmacology, Morehouse School of Medicine, 720 Westview Drive, SW, Atlanta, Ga. 30310.** Starting date: 1 November 1982.

RESEARCH DIRECTOR— THREE MILE ISLAND (TMI) PUBLIC HEALTH FUND

The TMI Public Health Fund has been established with headquarters in Philadelphia as a part of the \$25 million settlement of a class action suit on behalf of residents around Three Mile Island. Its purpose is to fund research and public education related to: monitoring of radioactive releases from TMI; possible health effects due to the accident; emergency planning for any future accidents; and general research into the health effects of low-level radiation. The research director would assist the plaintiffs' liaison counsel and an eminent advisory board in structuring and supervising the fund's research and public education programs. A Ph.D. in some relevant science or engineering discipline, demonstrated technical judgment outside one's own specialty, and an ability to write for and communicate with a concerned public are desired.

Please submit curriculum vitae, relevant samples of written work, and the names of three references to:

Daniel Berger
David Berger, P.A. Attorneys at Law
1622 Locust Street
Philadelphia, Pa. 19103

RESEARCH POSITION available for Ph.D./M.D. with training in cell membrane biochemistry/physiology/pharmacology. Send curriculum vitae to:

Dr. David McCarron
Division of Nephrology/Hypertension
Oregon Health Sciences University
Portland, Oregon 97201

POSITIONS OPEN

RESEARCH ASSOCIATE position available immediately for biochemist or biochemical pharmacologist. To play key role in basic and clinical studies of lung non-respiratory functions, 1 to 2 years of postdoctoral experience (and publications) in kinin, leukotriene, or prostaglandin research essential. Strong background in enzyme kinetics desirable. Curriculum vitae and three reference letters to: **C. N. Gillis, Ph.D., Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510.**

Yale University is an Affirmative Action/Equal Opportunity Employer.

RESEARCH POSITIONS to join NIH-funded team in the study of behavioral factors in the genesis of digitalis-toxic cardiac arrhythmias. (i) **Assistant professor** with Ph.D. in neurophysiology and postdoctoral training at chronic unit recording from brain stem of awake mammals. (ii) **Postdoctoral fellow** with Ph.D. in cardiovascular physiology and experience with chronic instrumentation techniques. Send curriculum vitae and reference letters to: **Dr. B. Natelson, Department of Neurosciences, UMDNJ—NJ Medical School, 88 Ross Street, East Orange, N.J. 07018.** An Equal Opportunity/Affirmative Action Employer.

RESEARCH PROFESSOR—MOLECULAR GENETICS DEPARTMENT OF MOLECULAR AND POPULATION GENETICS University of Georgia, Athens, Georgia 30602

The Department of Molecular and Population Genetics at the University of Georgia is seeking an outstanding scientist for appointment as research professor, beginning fall 1983. This is a senior level appointment requiring that the successful candidate have a distinguished record of research accomplishment in some area of molecular genetics. Nominations and applications, the latter to include curriculum vitae, bibliography, and the names of at least four persons who could provide a letter of evaluation, should be sent to: **Dr. Norman H. Giles, Chairman, Search Committee, Department of Molecular and Population Genetics, University of Georgia, Athens, Ga. 30602.** Screening of applicants will begin on 30 November 1982; the closing date for applications will be 15 January 1983.

The University of Georgia is an Equal Opportunity/Affirmative Action Institution.

SURGICAL PATHOLOGIST with subspecialty/research experience. Assistant/associate professor level. Full-time at medical school department with active service, research, and teaching roles. Send curriculum vitae and bibliography to: **Dr. R. D. Terry, Chairman, Department of Pathology, ALBERT EINSTEIN COLLEGE OF MEDICINE, 1300 Morris Park Avenue, Bronx, New York 10461.** An Equal Opportunity Employer.

THROMBOSIS RESEARCH—Position available in the Thrombosis Research Center of Temple University School of Medicine for research assistant professor, nontenure-track, grant-funded, for Ph.D. with a training in protein chemistry and enzymology. The task of the individual will be to purify and characterize the factor V receptor in human platelets using the techniques of affinity chromatography and cross-linking reagents. Experience includes determination of molecular weight by SDA electrophoresis and binding studies to proteins would be appropriate as well as expertise in preparation of cell memory. Send application and curriculum vitae to: **Dr. Andrei Budzynski, Thrombosis Research Center, Temple University School of Medicine, Philadelphia, Pa. 19140.** Affirmative Action/Equal Opportunity Employer.

DEPARTMENT OF ZOOLOGY UNIVERSITY OF WASHINGTON

Applications are invited for three anticipated faculty positions effective September 1983. Preference will be given to applicants in areas of ecology, invertebrate zoology, developmental biology, and comparative endocrinology. Candidates must present evidence of strong research activity and potential for obtaining research funding. Although higher rank is not precluded, it is expected that appointments will be made at the assistant professor level. Send curriculum vitae, copies of three publications, brief outline of previous and proposed research directions, and three letters of reference to: **A. O. Dennis Willows, Chairman, Department of Zoology, NJ-15, University of Washington, Seattle, Washington 98195,** by 30 November 1982. Equal Opportunity/Affirmative Action Employer.

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**University of Minnesota Medical School
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**Dr. Gordon H. Sato
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W. Alton Jones Cell Science Center, Inc.
Old Barn Road
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Research training will be for 1 to 2 years, and will be supplemented with lectures by faculty and invited speakers. Trainees must be citizens or noncitizen nationals of the United States or be permanent residents and have earned a Ph.D. or M.D. degree. Grants for predoctoral training in the department are also available. To apply or obtain more information, write: **Dr. N. K. Amy, Department of Nutritional Sciences, University of California, Berkeley, Calif. 94720**, or telephone: **415-642-8178**.

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POSTDOCTORAL TRAINEESHIP, Cardiovascular and Nuclear Medicine Research—Two traineeships available immediately at the Donner Laboratory, Biology and Medicine Division, Lawrence Berkeley Laboratory, University of California, for research in the area of cardiovascular disease, circulatory physiology, noninvasive physiological imaging, and nuclear medicine research. The National Research Service Awards pay \$13,380 to \$18,780 per annum, depending on experience. Training and research experience will be carried out in the context of a National Heart, Lung and Blood Institute Fellowship Program within the Donner Laboratory Research Medicine Group, which conducts an active program in advanced nuclear medical instrumentation, radionuclide development, positron emission tomography, electron microscopy, basic hematology, and computer methods for cardiovascular research. The participating professionals include nuclear medicine specialists, hematologists, radiologists, pathologists, physicists, and chemists. Facilities include emission tomography instrumentation, nuclear magnetic resonance, cyclotrons, large and small computer facilities, and animal surgery techniques laboratories with technical staff. Prefer background training in physiology, nuclear medicine, organic chemistry, or physics. U.S. citizens or permanent residents are eligible to apply. Send résumé, transcripts, and names and telephone numbers of two references to: **Dr. Thomas F. Budinger, Biology and Medicine Division, Lawrence Berkeley Laboratory, University of California, Berkeley, Calif. 94720**; telephone: **415-486-5435**. *An Affirmative Action/Equal Opportunity Employer, M/F.*

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Position open for **CARDIOLOGY FELLOWSHIP** at Duke Medical Center. Applicant must have M.D. degree or equivalent, at least 2 years of training in an accredited internal medicine residency program in the United States or Canada, or in a program determined to be equally acceptable by the chief of cardiology at Duke and must have credentials for a full license to practice medicine in North Carolina. Prior research experience in awake instrumented animal experiments in the fields of cardiology/physiology required. Experience in techniques for measuring myocardial blood flow and in noninvasive myocardial radioisotope imaging is required. The fellow will be expected to participate in teaching medical students and physician associate students in addition to research and clinical assignments. Minimum salary/stipend is \$18,600. Please send curriculum vitae and two letters of recommendation to: **Dr. Joseph C. Greenfield, Jr., Chief, Division of Cardiology, Box 3246, Duke Medical Center, Durham, N.C. 27710**. *Duke Medical Center is an Equal Opportunity/Affirmative Action Employer.*

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AWARDS

McKNIGHT AWARDS FOR INDIVIDUAL RESEARCH PROJECTS IN PLANT BIOLOGY

The McKnight Foundation announces a program to provide awards to outstanding individual scientists who are conducting basic research in plant biology as it relates to agriculture. The primary purpose is to make research support available to gifted individuals who have conducted independent research for a period of more than 2 years but less than 15 years following completion of postdoctoral studies. A secondary purpose is to support investigators who desire to undertake new initiatives in plant biology which may be beyond the scope of their previous endeavors.

The McKnight Awards will be ten in number in the amount of \$35,000 per year for a 3-year period. Use of the funds is flexible to permit approaches to research and training that are not presently possible through the usual funding channels. Each awardee will be supported with an award of \$35,000 payable to the sponsoring institution in 1983, 1984, and 1985. These awards are personal and their use is at the discretion of the awardee. Funds may be used for salary and direct costs but not indirect costs.

Applications will be evaluated by a Review Committee which will recommend candidates to the Foundation for appointment. The deadline for submission of applications is 1 December 1982 with the awards being effective 1 March 1983.

Requests for further information and instructions about applications should be directed to: **Russell V. Ewald, Executive Vice President, The McKnight Foundation, 410 Peavey Building, Minneapolis, Minnesota 55402**.

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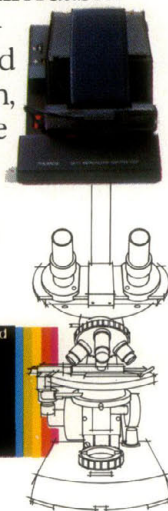
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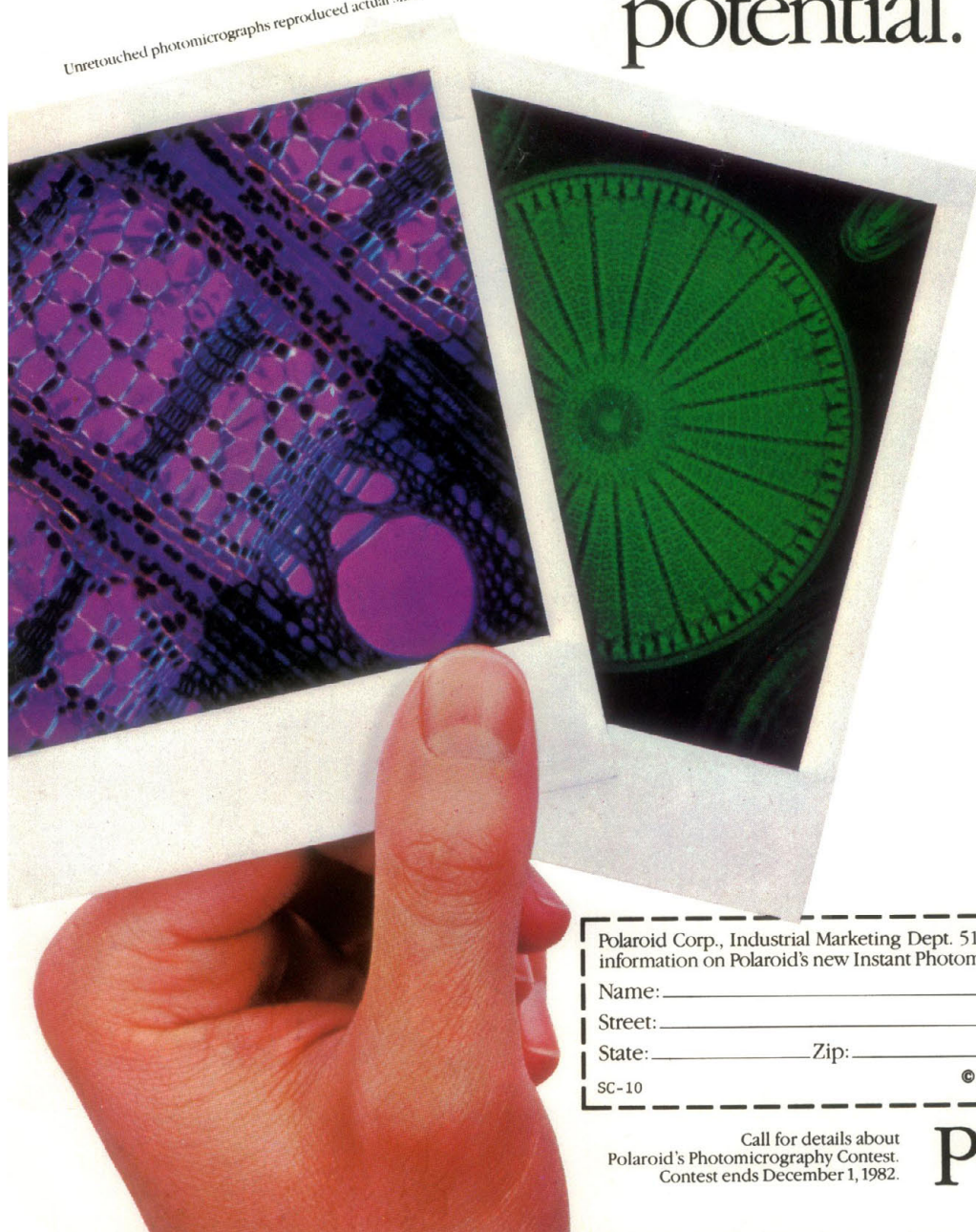
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