

chapter (occupying about a quarter of the volume) attempts to review the origin of cartilage, thus preempting the contents of many later chapters. The chapter does contain a useful compilation of the authors' extensive work on a partially characterized protein, known as bone morphogenetic protein, that induces ectopic cartilage in adult tissues.

Volume 3, "Biomedical Aspects," consists of ten largely unrelated essays. There is an excellent survey of current work on mechanisms of resorption and remodeling of cartilage. Therapeutic advances will depend on understanding intercellular signals that control cellular mechanisms. Cartilage plays a central role in regeneration, and the volume includes discussions both of epimorphic regeneration (replacement of lost appendages), in which a polarized blastema develops beneath wound epidermis, and of tissue regeneration, in which the granulation is unpolarized. Some unusual examples are given.

There are many age-related and degenerative disorders of cartilage, and the reader is guided through them by a foremost authority. The reader has to guide himself or herself through a comprehensive list of human tumors affecting cartilage, however. A discussion of neoplasia, metaplasia, and the formation of ectopic cartilage leaves one bewildered, partly because, as is pointed out in the book, there are differences in susceptibility of prechondrogenic cells to conversion, differences among species, and differences in stimuli employed.

Genetic defects of cartilage in humans include mutations affecting craniofacial development, some of which have bizarre results. They are of unknown etiology and are discussed in terms of developmental processes. In animals the mutations discussed are those that affect morphogenesis or tissue-specific macromolecules. An example of such a mutation is described in detail by an author who has identified the biochemical defect involved.

Volume 3 includes an excellent critical review of the immunology of cartilage that explains why cartilage is feebly antigenic in normal circumstances. There is a balanced assessment of the debated role of autoantibodies to cartilage constituents in autoimmune diseases such as rheumatoid arthritis.

A clear and wholly non-mathematical discussion of competing theories of joint lubrication makes refreshing reading. The discussion is written in a style that may annoy cognoscenti but is direct and comprehensible.

Bioelectricity, once regarded with

skepticism, is rapidly gaining acceptance. Hence a review of its effects on cartilage is timely. Electrical and electromagnetic field stimulation have different effects. Being non-invasive, the latter has considerable therapeutic potential, but the underlying mechanisms await rigorous experimental analysis.

Though there is considerable overlap among chapters in this treatise and some authors describe their own work in detail and take insufficient account of the contributions of others, the volumes make an important compendium of current knowledge.

HELEN MUIR

*Kennedy Institute of Rheumatology,  
Hammersmith, London W6 7DW,  
England*

### Reprints of Books Previously Reviewed

**Archetypes and Ancestors.** Palaeontology in Victorian London, 1850-1875. Adrian Desmond. University of Chicago Press, Chicago, 1984. Cloth, \$22.50. *Reviewed* 219, 1058 (1983).

**The Ecology of Algae.** F. E. Round. Cambridge University Press, New York, 1984. Paper, \$39.50. *Reviewed* 218, 990 (1982).

**A Feeling for the Organism.** The Life and Work of Barbara McClintock. Evelyn Fox Keller. Freeman, San Francisco, 1984. Paper, \$8.95. *Reviewed* 223, 482 (1984).

**The Self and Its Brain.** Karl R. Popper and John C. Eccles. Routledge and Kegan Paul, Boston, 1984. Paper, \$14.95. *Reviewed* 200, 1040 (1978).

### Books Received

**Airborne Pollutants from Coal Fired Power Plants.** Water Pollution Problems. S. H. Jenkins and P. Schjodtz Hansen, Eds. Pergamon, New York, 1983. iv, 133 pp., illus. Paper, \$40. *Water Science and Technology*, vol. 15, No. 12. From a conference, Copenhagen, Aug. 1982.

**Alexander Fleming.** The Man and the Myth. Gwyn Macfarlane. Harvard University Press, Cambridge, Mass., 1984. xvi, 304 pp. + plates. \$20.

**Biochemistry of Vision.** Hitoshi Shichi. Academic Press, New York, 1983. xii, 279 pp., illus. \$42.

**Biogeography and Ecology of the Pityusic Islands.** H. Kuhbier, J. A. Sloover, and C. Guerau d'Arelano Tur, Eds. Junk, The Hague, 1984 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xvi, 704 pp., illus. \$145. *Monographiae Biologicae*, vol. 52.

**Biological Basis of Detoxication.** John Caldwell and William B. Jakoby, Eds. Academic Press, New York, 1983. xiv, 429 pp., illus. \$54. *Biochemical Pharmacology and Toxicology*.

**Complications in Neurosurgery I.** A. M. Landolt, Ed. Karger, Basel, 1984. x, 172 pp. \$58.75. *Progress in Neurological Surgery*, vol. 11.

**A Comprehensive Guide to the Therapeutic Use of Trascor.** Stevo Julius, Ed. Karger, Basel, 1984. viii, 115 pp., illus. Paper, \$22.75. *Pharmaceutical*.

**Computer-Communication Networks.** James S. Meditch and Wesley W. Chu, Eds. Pergamon, New York, 1984. iv pp. + pp. 125-243, illus. \$52.25. Originally published in *Computers and Electrical Engineering*, vol. 10, No. 3.

**Computers for Professional Practice.** An Office Guide for Dentists, Physicians, Accountants, Lawyers or Anyone Computerizing Their Business. Ellis J. Neiburger. Andent, Waukegan, Ill., 1984. viii, 269 pp., illus. \$14.95.

**Continuous and Discrete Linear Systems.** Herbert P. Neff, Jr. Harper and Row, New York, 1984. viii, 519 pp., illus. \$36.50.

**Controversies in Pediatric Surgery.** Benjy Frances Brooks, Ed. University of Texas Press, Austin, 1984. xxiv, 232 pp., illus. \$35. From a symposium, Houston, 1978.

**Counting the Eons.** Isaac Asimov. Avon, New

York, 1984. 224 pp. Paper, \$3.95. Reprinted from *The Magazine of Fantasy and Science Fiction*. Reprint, 1982 edition.

**A Critical Psychology.** Interpretation of the Personal World. Edmund V. Sullivan. Plenum, New York, 1984. xvi, 195 pp. \$29.50. *PATH in Psychology*.

**Crown Ethers and Phase Transfer Catalysis in Polymer Science.** Lon J. Mathias and Charles E. Carraher, Jr., Eds. Plenum, New York, 1984. x, 426 pp., illus. \$59.50. *Polymer Science and Technology*, vol. 24. From a symposium, Las Vegas, March 1982.

**The Culture of Biomedicine.** D. Heyward Brock and Ann Harward, Eds. University of Delaware Press, Newark, 1984. 200 pp., illus. \$24.50. *Studies in Science and Culture*, vol. 1.

**Deserts and Arid Lands.** Farouk El-Baz, Ed. Nijhoff, The Hague, 1984 (U.S. distributor, Kluwer Boston, Hingham, Mass.). viii, 222 pp., illus. \$46. *Remote Sensing of Earth Resources and Environment*.

**Extrahepatic Drug Metabolism and Chemical Carcinogenesis.** Jan Rydström, Johan Montelius, and Margot Bengtsson, Eds. Elsevier, New York, 1983. xviii, 630 pp., illus. \$110.25. From a meeting, Stockholm, May 1983.

**The Federal Lands Revisited.** Marion Clawson. Resources for the Future, Washington, D.C., 1983 (distributor, Johns Hopkins University Press, Baltimore). xx, 302 pp., illus. \$25; Paper, \$8.95.

**Guidelines for the Control of Narcotic and Psychotropic Substances in the Context of the International Treaties.** Bror Rexed et al. World Health Organization, Geneva, 1984 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). 142 pp. Paper, \$8.50.

**Handbook of Cognitive Neuroscience.** Michael S. Gazzaniga, Ed. Plenum, New York, 1984. xii, 416 pp., illus. \$45.

**Handbook of Hypertension.** W. H. Birkenhäger and J. L. Reid, Eds. Elsevier, New York, 1983. Vol. 1, *Clinical Aspects of Essential Hypertension*. J. I. S. Robertson, Ed. xvi, 517 pp., illus. \$86. Vol. 2, *Clinical Aspects of Secondary Hypertension*. J. I. S. Robertson, Ed. xii, 333 pp., illus. \$79.95.

**Issues in Psychotherapy Research.** Michel Hersen, Larry Michelson, and Alan S. Bellack, Eds. Plenum, New York, 1984. xii, 423 pp. \$45. *Applied Clinical Psychology*.

**Language Functions and Brain Organization.** Sidney J. Segalowitz, Ed. Academic Press, New York, 1983. xviii, 377 pp. \$43.50. *Perspectives in Neurolinguistics, Neuropsychology, and Psycholinguistics*.

**Laser Interaction and Related Plasma Phenomena.** Vol. 6. Heinrich Hora and George H. Miley, Eds. Plenum, New York, 1984. xviii, 1161 pp., illus. \$135. From a workshop, Monterey, Calif., Oct. 1982.

**Molecular Evolution and Organization of the Chromosome.** A. Lima-de-Faria. Elsevier, New York, 1983. xlv, 1186 pp., illus. \$191.50.

**Molecular Evolution and Protobiology.** Koichiro Matsuno et al., Eds. Plenum, New York, 1984. x, 470 pp., illus. \$65.

**Neuroendocrine Aspects of Reproduction.** Reid L. Norman, Ed. Academic Press, New York, 1983. xvi, 430 pp., illus. \$39. *ORPRC Symposia on Primate Reproductive Biology*, 2. From a symposium, Beaverton, Ore., Oct. 1982.

**Neurometric Assessment of Brain Dysfunction in Neurological Patients.** Thalia Harmony, Erlbaum, Hillsdale, N.J., 1984. xvi, 577 pp., illus. \$70. *Functional Neuroscience*, vol. 3.

**Optical Waves in Crystals.** Propagation and Control of Laser Radiation. Amnon Yariv and Pochi Yeh. Wiley-Interscience, New York, 1983. xiv, 589 pp., illus. \$49.95.

**Periphyton of Freshwater Ecosystems.** Robert G. Wetzel, Ed. Junk, The Hague, 1983 (U.S. distributor, Kluwer Boston, Hingham, Mass.). x, 346 pp., illus. \$87.50. *Developments in Hydrobiology*, 17. From a workshop, Växjö, Sweden, Sept. 1982.

**Problems in Syntax.** Liliane Tasmowski and Dominique Willems, Eds. Plenum, New York, and Communication and Cognition, Ghent, 1983. xviii, 393 pp., illus. \$49.50. *Studies in Language* 2.

**Technostress.** The Human Cost of the Computer Revolution. Craig Brod. Addison-Wesley, Reading, Mass., 1984. xiv, 242 pp. \$16.95.

**Temps de Travail, Temps de Vivre.** Analyses pour une Psychopathologie du Temps. Paul Sivadon and Adolfo Fernandez-Zoila. Mardaga, Brussels, 1983. 232 pp. Paper, \$50 BF. *Psychologie et Sciences Humaines*, 127.

**Use of Tissue Culture and Protoplasts in Plant Pathology.** John P. Helgeson and B. J. Deverall, Eds. Academic Press, New York, 1983. xii, 194 pp., illus. \$23. From a symposium, Melbourne, Australia, Aug. 1983.

**Viral Hepatitis and Delta Infection.** Giorgio Verme, Ferruccio Bonino, and Mario Rizzetto, Eds. Liss, New York, 1984. xxii, 421 pp., illus. \$54. *Progress in Clinical and Biological Research*, vol. 143. From a symposium, Torino, Italy, June 1983.

# Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations. Any deadline in ad must be at least 2 weeks after date of issue in which ad appears. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference.

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## POSITIONS WANTED

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**Biopsychologist** (Ph.D. Rutgers), experimental, statistics bias. Knows anatomy, endocrinology, computer languages, including Assembly. Publications: feeding, obesity, exercise, aggression. Experienced teacher. Seeks teaching or postdoctorate, above or sensory research. Box 21047, Athens 11410, Greece. Telephone: 011 301 4134789. 6/29; 7/6, 13

**Geneticist/Statistician/Programmer.** Ph.D. 1981 (evolutionary biology); 3 years of postdoctoral research; 9-plus publications; 5-plus computer languages. Knowledge of evolutionary biology, genetics, ecology, *Drosophila*, statistics and applied mathematics, microcomputer usage. Seeking research, statistical and/or programming position. Box 165, SCIENCE. 6/29; 7/6

**Marine Biologist.** Ph.D. Fish physiology/larval ecology, marine invertebrate/zooplankton biology, with strong background in hydrocarbon chemistry, CGC, pollution fate and effects. Seeks entry level research and/or teaching position. Box 157, SCIENCE. 6/29; 7/6

**Physician,** recently qualified, seeks a research position to a preceptor in any basic medical research field (immunology/cardiovascular/cancer/others). The position to a preceptor in a nongovernmental-funded grant, either academic or industry. Forward correspondence by airmail to: Waran, Postfach 334, Zürich 8036, Switzerland. X

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### PANLABS FERMTECH— ASSISTANT DIRECTOR

A position is open in the fermentation division of Panlabs Taiwan Ltd. in Taiwan. The candidate should have a Ph.D. and be experienced in using recombinant DNA techniques. Fermentation experience in industry would be desirable. A fluent knowledge of Chinese is essential.

Send résumé and the names of three references to: **Dr. Joseph Lein, Panlabs, P.O. Box 190, Deer Harbor, Wash. 98243.**

**ASSISTANT PROFESSOR, AQUACULTURE.** Full-time position starting 1 January or 1 September 1984. Applicants should have a Ph.D. in aquaculture and a strong fisheries and disease or pathology background. The successful individual will play an important part in a team-oriented approach in developing an aquaculture program. A strong commitment to undergraduate instruction is essential and postdoctoral experience is desirable. Send curriculum vitae and letter describing future goals and teaching interests, along with names and telephone numbers of three references before 15 September 1984 to: **Dr. Robert M. Hawthorne, Jr., Chair, Aquaculture Search Committee, Center of Environmental Sciences, Unity College, Unity, Maine 04988.**

**ASSISTANT PROFESSOR, DEPARTMENT OF BIOCHEMISTRY,** State University of New York (SUNY) at Buffalo, Schools of Medicine, Dentistry and Pharmacy. Tenure-track position requiring a positive, long-term commitment to teaching graduate, undergraduate, and professional students; interest in training Ph.D. candidates and demonstrated proficiency in research with promise for extramural funding. Talented biochemists, especially in the areas of cellular metabolism and its control, biochemical aspects of disease, and membrane biochemistry and cell biology, are encouraged to submit curriculum vitae, a statement of long-term research objectives, and reprints or preprints. Applicants should also have three letters of reference sent to:

**Alexander C. Brownie, Chairman**  
**Department of Biochemistry**  
**102 Cary Hall, SUNY**  
**Buffalo, N.Y. 14214**

Applications must be postmarked by 15 August 1984.

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### ASSISTANT PROFESSOR PHARMACOLOGY/TOXICOLOGY

Applications are invited for an up-to-5-year, potentially tenure-track position at the assistant professor level in the Division of Pharmacology and Toxicology of the College of Pharmacy. The position is available 1 January 1985. Duties include both graduate and undergraduate teaching and the establishment of an independent research program. Preference will be given to candidates with research interests in biochemical or molecular toxicology. Send curriculum vitae and the names of three references to: **Dr. C. K. Erickson, College of Pharmacy, The University of Texas at Austin, Austin, Texas 78712.**

## POSITIONS OPEN

**ASSISTANT PROFESSOR OF BIOCHEMISTRY.** Tenure track, January or July 1985. Candidate should show promise of excellence in research and teaching. Research area not specified. Postdoctoral training required. Submit résumé, a one-page summary of research goals, three references, and a recent reprint by 1 September 1984 to: **G. C. Tremblay, Department of Biochemistry and Biophysics, THE UNIVERSITY OF RHODE ISLAND, Kingston, Rhode Island 02881-0812.** *An Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT PROFESSOR OF MICROBIOLOGY/BACTERIOLOGY.** Applications are invited for an assistant professorship (non-tenure track) to begin September 1984. Two-year appointment. Possibility of position becoming tenure track. Qualifications include a Ph.D. degree, postdoctoral experience, and a commitment to teaching (general microbiology) and research. Salary commensurate with qualifications and experience. Curriculum vitae, and names, addresses, and telephone numbers of three references should be sent by 20 July 1984 to: **Dr. Albey M. Reiner, Search Committee, Department of Microbiology, University of Massachusetts, Amherst, Mass. 01003.** *The University of Massachusetts is an Affirmative Action/Equal Opportunity Employer.*

The Department of Chemistry at Purdue University solicits applications for an **ASSISTANT OR ASSOCIATE PROFESSOR** level, tenure-track position in any area of **organic chemistry**, effective August 1985. Minimum requirements include a Ph.D. in chemistry and exceptional promise in research and teaching at the undergraduate and graduate levels. Curriculum vitae, including undergraduate and graduate transcripts, a summary of planned research, and three letters of recommendation should be sent by 1 November 1984 to: **Professor H. L. Pardue, Head, Department of Chemistry, Purdue University, West Lafayette, Ind. 47907.** *Purdue is an Equal Opportunity/Affirmative Action Employer.*

### ASSOCIATE CLINICAL DIRECTOR Ph.D. in Pharmacology or Biochemistry

Clinical scientist for testing facility in the south. Industry experience preferred but not necessary. Strong communication skills, both oral and written, are a prerequisite.

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To apply send your résumé or curriculum vitae with salary history to: **Box 163, SCIENCE.**

**BIOLOGY APPOINTMENT.** Visiting instructor or assistant professor, ABD or Ph.D. Must be prepared to teach cell biology, botany, and either microbiology or biochemistry and a special 4-week course in January. Submit letter and résumé and have transcripts and three recommendations sent by 1 August to: **Dr. James B. Mitchell, Chairman, Biology Department, Moravian College, Bethlehem, Pa. 18018; telephone: 215-861-1427.** Moravian is an independent, liberal arts college. *Equal Opportunity Employer.*

### CYTOGENETICIST

Arkansas Children's Hospital, an affiliate of University of Arkansas for Medical Sciences, is seeking a Ph.D. cytogeneticist to direct the clinical cytogenetics laboratory. American Board of Medical Genetics certification or eligibility preferred. Applicants should submit résumés and references to: **Personnel Department, Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Ark. 72202; telephone: 501-370-1166.**

The Department of Chemistry at Purdue University solicits applications for a **FACULTY POSITION** in any area of **analytical chemistry**, effective August 1985. Applicants will be considered at the assistant and associate professorial rank. Minimum requirements include a Ph.D. in chemistry and exceptional promise in research and teaching at the undergraduate and graduate levels. Applicants for associate professor must have demonstrated distinguished research and teaching abilities. Curriculum vitae, including undergraduate and graduate transcripts for applicants at the assistant professor level, a summary of planned research, and three letters of recommendation should be sent by 15 October 1984 to: **Professor H. L. Pardue, Head, Department of Chemistry, Purdue University, West Lafayette, Indiana 47907.** *Purdue is an Equal Opportunity/Affirmative Action Employer.*



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[several positions]

Applicants for these research positions should have a Ph.D. degree (or equivalent qualification) and expertise in any of the areas of research listed below. A number of appointments will be available from early 1985.

**Department of Biochemistry** (head: Professor F. Gibson): Energy-transducing ATPase; membrane assembly; bioenergetics; mechanism of action of classical and multifunctional enzymes; molecular biology; gene expression; differentiation; oncogenesis.

**Department of Experimental Pathology** (head: Professor P. C. Doherty): Biology and biochemistry of tumour metastasis, malignancy and host response; viral and auto-immune pathological process in the central nervous system; vascular and lymphatic pathology; inflammation; pathogenesis of malaria.

**Department of Human Biology** (head: Dr. R. L. Kirk): Molecular biology of inherited disease, cytogenetics and somatic cell genetics; human population genetics, including DNA polymorphisms.

**Department of Immunology** (head: Professor B. Morris): Ontogeny of the immune response; immunology of the foetus and pregnancy; experimental surgery of the embryo and foetus; embryo transplantation; genetics of disease resistance; reproductive and developmental biology; tissue transplantation; physiology of the lymphatic system.

**Department of Medicine and Clinical Science** (head: Professor W. F. Doe): Mucosal immunity and inflammation; neutral proteases; interleukins and differentiation of bone marrow cells, macrophages and natural killer cells; pathogenesis of inflammatory bowel disease and colon cancer; neurophysiology of intestinal motility; calcium and cell regulation; malignant hyperpyrexia; asthma; platelets, atheroma and haemostasis; transplantation biology.

**Department of Microbiology** (head: Professor G. L. Ada): Properties of infectious agents, especially viruses; epidemiological studies of, and immune responses, particularly cell-mediated responses, to viral infections; transformation of cells by viruses; engineering of viruses to make better vaccines; surveillance mechanisms against tumours; membrane structures and antigens, such as histocompatibility antigens, involved in cell-cell recognition.

**Department of Pharmacology** (head: Professor D. R. Curtis): Mammalian central transmitters; pain and analgesia; mammalian peripheral sympathetic synapses; biophysics of smooth muscle; nerve growth factors.

**Department of Physical Biochemistry** (head: Professor L. W. Nichol): Biological macromolecules; interacting protein systems; multienzyme complexes; enzymes of sulphur metabolism; protein conformation and hydration; secretory and blood proteins.

**Department of Physiology** (head: Professor P. W. Gage): Synaptic transmission at peripheral and central synapses; effects of general anaesthetics; calcium ionic and gating currents; charge movements in nerve and muscle; contractile activation in muscle; visual information processing.

**Experimental Neurology Unit** (director: Professor R. Porter): Neurophysiology; spinal cord; synaptic transmission at central synapses; respiratory neurophysiology; somatosensory pathways; control of movement; physiology of the cerebral cortex in primates.

**Influenza Virus Immunochemistry Laboratory** (Dr. W. G. Laver): Structure and variation of influenza virus antigens and their antibodies.

**CONDITIONS OF EMPLOYMENT**

Salary will be in accordance with qualifications and experience within the ranges: senior research fellow: \$35,720 to \$42,607 per annum; research fellow: \$25,571 to \$33,594 per annum; postdoctoral fellow grade 1 [at fixed point on scale]: \$22,041 to \$25,249 per annum (A\$1.:\$U.S..89).

Appointment as senior research fellow/per annum research fellow will be for up to 3 years initially with the possibility of extension after review to maximum of 5 years; as postdoctoral fellow for 1 or 2 years initially with possibility of extension to maximum of 3 years.

Grants are provided towards travel and removal. Assistance towards housing is given to an appointee from outside Canberra. Eligible appointees will be required to join the superannuation scheme for Australian Universities. The University reserves the right not to make an appointment or to make an appointment by invitation at any time. Maternity leave is available.

Prospective applicants are encouraged to write for further information before lodging applications with the undersigned. The closing date for receipt of applications is 17 August 1984.

**P. M. White, Acting Registrar**  
The Australian National University  
G.P.O. Box 4  
Canberra, ACT 2601, Australia

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**CELLULAR IMMUNOLOGIST/MOLECULAR BIOLOGIST.** Applications are requested for the **DIRECTOR** of the Laboratory of Cellular Immunology/Molecular Biology, Section of Hematology/Oncology, Loyola University School of Medicine. Joint appointments in medicine and one of the basic science departments are available as assistant or associate professors. A Ph.D. and postdoctoral training are required. Hard money support is available for salary and laboratory operating budget. Send curriculum vitae to: **Dr. Richard I. Fisher, Chief, Section of Hematology/Oncology, Loyola University School of Medicine, 2160 South First Avenue, Maywood, Ill. 60153.**

### CHAIR AND PROFESSOR DIVISION OF NEMATOLOGY

Nominations and applications are invited for an 11-month, tenured position at the University of California at Davis to serve as chair of the Division of Nematology. The chair will also have some research, teaching, and student advising responsibilities. The usual appointment as chair is for 5 to 7 years, subject to renewal on review. Upon completion of service as chair of the Division, the faculty member may return to full-time teaching and research. The position is available 1 September 1984.

Qualifications include a Ph.D. with experience in nematology or closely related discipline, proven leadership and management qualities, and a record of scholarly and academic achievement.

Applicants should submit curriculum vitae with a bibliography and reprints of pertinent publications, statement of research, teaching, and administrative interests and background in each, and the names and addresses of at least three references to: **Dr. R. K. Webster, Acting Associate Dean and Search Committee Chair, College of Agricultural and Environmental Sciences, Dean's Office, 228 Mrak Hall, University of California, Davis, Calif. 95616.** Applications must be received by 1 August 1984. Applications received later will not be considered unless the position is reopened for recruitment.

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### NATIONAL SCIENCE FOUNDATION Washington, D.C.

The Office of the Controller is seeking qualified applicants for the position of **CHIEF, BUDGET ANALYSIS AND EXECUTION BRANCH.** Incumbent is responsible for developing and maintaining budget and management procedures and data bases, and monitoring systems for providing budget control for the Foundation. Appointment to this Senior Executive Service position, which has a salary range of ES-1 at \$59,223 to ES-3 at \$64,008 (for new SES appointment) will be on a career basis. Qualification requirements include experience in budget execution and control for a major organization and experience in directing the design and implementation of budget-related statistical and analytical studies, including the preparation of written analyses and reports. Applicants should contact: **Margaret Cademartori, telephone: 202-357-7857** (hearing impaired—TDD 202-357-7492) to request announcement EPS 84-215 which contains complete qualification requirements and application procedures. Applications must be received by 13 July 1984. *An Equal Opportunity Employer.*

### CYTOGENETICIST

Tenure-track position for Ph.D. available 1 July 1984. Opportunity to direct clinical cytogenetics laboratory, research, and teach. Submit résumé and three letters of recommendation to: **Dr. Harold O. Goodman, Section on Medical Genetics, Bowman Gray School of Medicine, Winston-Salem, N.C. 27103.** *An Equal Opportunity/Affirmative Action Employer.*

### ELECTRON MICROSCOPY TECHNICIAN

Position available for experienced electron microscopist to manage a departmental facility. Responsibilities include instrument maintenance (Philips 201 TEM, ETEC Autoscan SEM, support equipment), assistance in training students, and performance of service work for faculty. Applicants should have extensive experience, especially in thin-section methods. Master's in biology preferred. Salary commensurate with education/experience. Send résumé and three letters of recommendation to arrive by 30 August. Mail to: **Dr. Curt Puschel, Department of Biological Sciences, State University of New York at Binghamton, Binghamton, New York 13901.** *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**COLLEGE TEACHER OF MATHEMATICS, PHYSICS, COMPUTER SCIENCE.** Tenure-track appointment in mathematics, physics, and computer science available September 1984. Requirements: Ph.D. preferred; ability to teach upper level courses in mathematics, introductory calculus physics, and some courses in computer science. Send résumé to: **Dr. Susan Smith Batell, Dean of Academic Affairs, College of Saint Teresa, Winona, Minnesota 55987.** *An Equal Opportunity/Affirmative Action Employer.*

### CRANIOFACIAL BIOLOGY

Fully supported position available immediately at the assistant professor level for individual with research experience in mammalian craniofacial growth and development, physiology of mastication, comparative craniofacial functional morphology, or related area. Teaching responsibilities include lectures and seminars in craniofacial biology to orthodontic and dental students, but are limited to allow major commitment to development of a research program. Opportunities for collaboration with an unusually large group of faculty with similar interests. Ph.D. and some teaching experience required. Send curriculum vitae and names of three references by 2 September to: **Dr. Richard J. Smith, Chairman, Department of Orthodontics, Washington University School of Dental Medicine, 4559 Scott Avenue, St. Louis, Mo. 63110.**

*An Equal Opportunity/Affirmative Action Employer*

**DIRECTOR—Undergraduate Molecular Biology Program.** Recent Ph.D. Responsible for overseeing students, teaching, and recruitment. Salary commensurate with experience and qualifications. Excellent benefits. Deadline for response: 15 July. Résumé to: **Dean of Administration, Long Island University, Brooklyn Campus, University Plaza, Brooklyn, N.Y. 11201.** *An Equal Opportunity/Affirmative Action Employer.*

**ETHOLOGY/VERTEBRATE ZOOLOGY.** The Department of Biological Sciences at Smith College seeks an individual to fill a tenure-track appointment at the assistant professor (Ph.D.) level. Candidates must be strongly committed to teaching as well as to conducting research in which undergraduates can participate. Teaching responsibilities would include an introductory course in vertebrate zoology and an advanced course in animal behavior. Interests in evolutionary biology and research that incorporates fieldwork with birds or mammals are preferred. The position opens in January 1985 but could be held for the successful candidate until the following September if necessary. Applications will be accepted until 30 September 1984. Please submit a résumé (including statements of research and teaching interests) and arrange for three letters of reference to be sent to: **Dr. Stephen G. Tilley, Department of Biological Sciences, Smith College, Northampton, Mass. 01063.** *An Equal Opportunity Employer.*

### EXPERIMENTAL PATHOLOGIST

The Jackson Laboratory is seeking an experimental pathologist to head the comparative pathology laboratory. Must be Board-certified or -eligible in pathology (M.D. or D.V.M.). Candidate will conduct independent research program. Fields of interest include, but are not limited to, molecular biology, ultrastructure, immunology, oncology; all specialty areas will be considered. *An Equal Opportunity Employer.*

Send letter of interest, résumé, and names of three references to:

**Chairman, Search Committee  
Experimental Pathology  
The Jackson Laboratory  
Bar Harbor, Maine 04609**

### FACULTY POSITIONS IN MICROBIOLOGY AND MOLECULAR GENETICS

The Department of Microbiology and Molecular Genetics at the University of Cincinnati College of Medicine has four faculty openings in the area of molecular genetics. These positions are in the tenure track and one or more will be filled with a molecular immunologist. Applicants should submit curriculum vitae and a short statement of research accomplishments and direction for future research, along with the names of three scientists willing to write letters of recommendation. These should be forwarded to: **Dr. Jerry B. Lingrel, Chairman, Department of Microbiology and Molecular Genetics, University of Cincinnati College of Medicine, Cincinnati, Ohio 45267-0524.** *The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**CYTOGENETICIST.** Prenatal Diagnosis Laboratory of New York City (PDL) is seeking an **ASSOCIATE DIRECTOR.** PDL provides counseling, education, chromosome analysis, and alpha-fetoprotein studies for over 2300 women annually. Applicants should possess a Ph.D. or M.D. with at least 3 years of appropriate experience. Good technical and communicative skills are essential. American Board of Medical Genetics certification or eligibility preferred. Send curriculum vitae to: **L. Y. F. Hsu, M.D., Prenatal Diagnosis Laboratory of New York City, 455 First Avenue, New York, N.Y. 10016; telephone: 212-578-4702.**

### DIRECTOR-AT-LARGE

#### Western Agriculture Experiment Station

The Western Agriculture Experiment Station directors invite applications for a **Director-At-Large** to be located in the western region. Candidates must have good communication skills, a doctoral degree (in a field of agricultural science preferred), and have leadership experience in a state agricultural experiment station or equivalent agricultural research organization. The incumbent will work with experiment station directors and provide leadership in strengthening cooperative relationships in research, planning, and coordination regionally and nationally. Please send, by 15 July 1984, application, curriculum vitae, and addresses and telephone numbers of three references to: **C. Elmer Clark, Utah State University, UMC-48, Logan, Utah 84322.**

*An Affirmative Action/Equal Opportunity Employer*

### FACULTY POSITION ANALYTICAL-ORGANIC CHEMIST

The Department of Chemical Oceanography, Virginia Institute of Marine Science, School of Marine Science, of the College of William and Mary invites applications for a 12-month, tenure-track assistant or associate professor position. Candidates must have a Ph.D. in analytical or organic chemistry and demonstrate competence with GC, HPLC, and GC-MS. They should have a keen interest in aqueous environmental organic chemistry. Duties will include graduate-level teaching, advising, and research.

Send curriculum vitae and three letters of recommendation by 15 August to: **Dr. Robert J. Huggett, Virginia Institute of Marine Science, Gloucester Point, Virginia 23062.**

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

### FACULTY POSITION

#### Department of Anatomy University of Saskatchewan

Applications are invited for a tenure-track position at the assistant professor level. Applicants should have experience in teaching anatomy, embryology, neuroanatomy, or cell biology. Applicants should also have proven research background and a strong research program.

Applications, including curriculum vitae, names of three referees, and an outline of proposed research should be submitted to:

**Dr. S. Fedoroff  
Professor and Head  
Department of Anatomy  
College of Medicine  
University of Saskatchewan  
Saskatoon, Saskatchewan, Canada S7N 0W0**

*The University of Saskatchewan is an Equal Opportunity Employer. In accordance with Canadian immigration requirements, Canadian citizens or landed immigrants will be given preference.*

**GC/MS OPERATOR ASSOCIATE IN ENGINEERING** position is available in the Department of Environmental Engineering Sciences, University of Florida, for experienced person to operate a Hewlett-Packard model 5985B GC/MS System. The position requires, at a minimum, an M.S. degree in chemistry or a closely related discipline. Operator is expected to prepare and analyze environmental samples for routine and research projects. Operator will fully participate in research proposals and implementation as related to operation of a GC/MS departmental service laboratory and assist in teaching applications. Application, including a résumé and three references, should be forwarded to: **Dr. Lamar Miller, Black Hall, University of Florida, Gainesville, Florida 32611,** by 30 July 1984. The position will be filled as soon as practical after that date. *The University of Florida is an Equal Opportunity/Affirmative Action Employer.* Salary is negotiable based on training and experience.



## OTTAWA CIVIC HOSPITAL

This 925-bed teaching hospital (University of Ottawa) invites applications for the position of Chief of the Department of Laboratory Medicine. The department includes anatomical pathology, biochemistry, haematology/blood banking, and microbiology.

Candidates should hold F.R.C.P. (C) or equivalent in one of the above disciplines.

Applications and enquiries should be addressed to:

**Dr. Finlay McKerracher**  
Vice President—Medical Affairs  
Ottawa Civic Hospital  
1053 Carling Avenue  
Ottawa, Ontario, Canada K1Y 4E9

Telephone: 613-725-4203

Closing date for applications is 14 July 1984.

*Note: In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

## Brookhaven Symposia in Biology Number 33

September 30—October 3, 1984



**BROOKHAVEN  
NATIONAL LABORATORY**  
Upton, NY 11973, USA

### The Molecular Basis of Aging

Aging research has long been characterized by a plethora of hypotheses and a dearth of experimental data. Recent findings in molecular biology have augmented some long-standing theories of aging but challenged others. The purpose of the Symposium is to assimilate this data and to modify, if necessary, current theories of aging.

The Symposium will encourage a two-way flow of information, highlighting the potential of molecular studies to clinical problems and defining those aging problems most amenable to resolution by innovative techniques of molecular biology.

Sessions will cover:

- Wear and Tear Hypotheses
- Aging in Cellular Proteins
- Changes in DNA with Age
- Diseases Featuring Altered Rates of Aging

Poster presentations are invited.

(Deadline for receipt of poster abstracts: September 7, 1984)  
Scholarships to cover registration fees and some travel expenses are available for recent M.D.s and postgraduate and graduate students.

Registration fee: \$250.00

(Non-refundable after September 15, 1984)  
Includes dinners, accommodations and Symposium proceedings

For full information and registration forms, please contact:

**H. Z. Kondratuk**  
Biology Department  
Brookhaven National Laboratory  
Upton, L.I., New York, 11973, USA  
Telephone: (516) 282-3415

## BEHAVIORAL SCIENCES

The Behavioral Sciences Department of the Armed Forces Radiobiology Research Institute (AFRRI) is seeking two behavioral scientists and one psychology technician to conduct animal research on the behavioral effects of ionizing radiation. The AFRRI is the principal radiobiology research laboratory for the Department of Defense. The Behavioral Sciences Department is responsible for research on the effects of ionizing radiation on behavior and on the interaction between chemical or pharmacological factors and the psychobiological response to radiation. The scientists are responsible for a research program utilizing experimental animal models, operant and classical conditioning, and physiological/biochemical measurement. Candidates will be expected to plan, initiate, and direct a research program and supervise scientific and technical staff comprised of military and/or civilian personnel. Desirable qualifications include a Ph.D. in experimental psychology or a related biological science, a strong publication record, and independent research experience. These permanent positions are available immediately. Salary ranges from \$30,000 to \$40,000. The technician position is to assist the principal investigator. Principal duties include animal handling, daily conduct of experiments, and data processing. Salary ranges from \$14,000 to \$22,000. To apply for either of these Civil Service positions, send application, including SF-171, curriculum vitae, and reprints of published research to: **The Armed Forces Radiobiology Research Institute, Civilian Personnel Office, Bethesda, Md. 20814.** Reference Announcement Number 26/84 for the scientist positions, Number 28/84 for the technician position. Direct inquiries to: **Dr. Alan H. Harris, Department Chairman, or Vince Ackermann, Personnel, telephone: 202-295-1426.** An Equal Opportunity Employer.

## Senior Biomedical Information Scientist

The Medical Research Division of American Cyanamid Company is seeking an individual with a Ph.D. in a life science to contribute to the interdisciplinary research, biomedical development and marketing programs related to cancer, infectious and central nervous system diseases.

Responsibilities include monitoring the current published literature for important research advances and conducting retrospective literature surveys using modern information retrieval systems.

Competitive salary and liberal fringe benefits are offered in this desirable suburban location 30 miles from New York City. Please reply in confidence to Mrs. Nancy Levine, Professional Employment Coordinator.



**American Cyanamid  
Company**  
Medical Research Division  
Lederle Laboratories  
Pearl River, NY 10965  
An Equal Opportunity  
Employer m/f

## University of California Lawrence Berkeley Laboratory Announces an opening 1 January 1985 for Associate Laboratory Director and Head of Nuclear Science Division

The Lawrence Berkeley Laboratory is a multi-purpose research laboratory funded by the Department of Energy. Its Nuclear Science Division conducts a multimillion dollar research program in low, medium and high-energy nuclear physics. The Head of the Division has primary responsibility for the leadership and management of this program under the general direction of the Deputy Director for General Sciences and the Laboratory Director. As an Associate Director of the Laboratory, the incumbent will also participate in formulating the research policy and long-term direction of the Laboratory as a whole. Candidates must have had significant experience as practicing nuclear physicists and be of the general calibre of persons holding senior tenure positions in major research institutions. The successful applicant would be expected to serve as Associate Director and Division Head for an initial term of 3 to 5 years, subject to renewal for further terms by mutual agreement.

The Laboratory is seeking a respected and energetic nuclear physicist willing to play a strong leadership role at a challenging time. Qualifications must be such that it will be natural to consider him or her for a tenured appointment in the Department of Physics on the Berkeley campus of the University of California, as well as at the Laboratory. Interested applicants should submit a curriculum vitae, together with the names of three references to: **Dr. J.D. Jackson, Chairman, Nuclear Science Search Committee, c/o Employment Office, LAWRENCE BERKELEY LABORATORY, 1 Cyclotron Road, Berkeley, CA 94720.** Refer to Job A/2947. An Equal Opportunity Employer M/F/H. Deadline for applications: August 31, 1984.



**LAWRENCE  
BERKELEY  
LABORATORY**

University of California



## POSITIONS OPEN

**DIRECTOR, GOVERNMENTAL AND FOUNDATION RESEARCH PROGRAMS.** Anticipated unranked faculty; 12-month appointment. Mission includes designing and implementing an effective program to stimulate faculty applications for external funding for research and training activities, maintaining liaison with governmental agencies and private foundations, consulting and assisting in proposal preparation. Requirements include familiarity with public and private sources of research and training support, in-depth knowledge of agency priorities and procedures, excellent communication and human relations skills, a master's degree and at least 3 years of relevant experience. Some scientific background and proposal writing experience helpful. Salary: \$22,500 to \$26,500. Deadline for letter of application and résumé (citing three references) is 15 July 1984. Submit to: **Dr. Dorin Schumacher, Director, Office of Sponsored Projects, Altgeld Hall, 207A, Northern Illinois University, DeKalb, Illinois 60115.**

*Affirmative Action/Equal Opportunity Employer*

### FACULTY POSITION IN PHARMACEUTICAL BIOTECHNOLOGY

Applications are invited for a 12-month, tenure-track faculty position at the level of assistant/associate professor in the Division of Medicinal Chemistry and Pharmacognosy. A Ph.D. is required with at least 2 years of postdoctoral experience in the cloning and expression of heterologous genes. Candidates must be interested in undergraduate and graduate teaching and be able to develop a vigorous research program in the production of pharmaceuticals employing recombinant DNA technology.

Please send curriculum vitae and names of three references by 31 July 1984 to:

**Dr. George A. Digenis**  
College of Pharmacy  
University of Kentucky  
Lexington, Kentucky 40536-0053  
*An Equal Opportunity Employer*

### University of Pennsylvania School of Medicine Department of Pathology and Laboratory Medicine, Division of Laboratory Medicine

Applicants are invited to apply for a **FACULTY POSITION** in the Coagulation-Thrombosis Laboratory. The candidate is expected to maintain an independent research program in an area of hemostasis and thrombosis and to have expertise in the day-to-day operations of a clinical coagulation and thrombosis laboratory. Interest in the training of pathology residents and commitments to high standards of patient care are essential. The candidate must have an M.D. degree and be Board-eligible or -certified in clinical pathology. Academic appointment and salary will be commensurate with the level of previous experience. Qualified applicants are to send inquiries, curriculum vitae, and a list of at least three references to: **Sanford J. Shattil, M.D., Director, Coagulation and Thrombosis Laboratory, Department of Pathology and Laboratory Medicine, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, Pa. 19104. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.**

### TRUDEAU INSTITUTE

Applications are invited for an **IMMUNOBIOLOGIST** to develop an independent research program. Consideration will be given to applicants with training and interest in antiviral immunity or transplantation immunology. Appointment may be made at either junior or senior faculty rank. Applicants should have at least 3 years of postdoctoral experience and provide visible evidence that they already have been scientifically productive. Funds are available to support the successful applicant for a minimum of 3 years.

The Trudeau Institute is a not-for-profit pure research institute situated on the shore of Saranac Lake, N.Y., 8 miles from Lake Placid, N.Y.

Send curriculum vitae and names of three references to:

**Dr. Robert J. North, Director**  
Trudeau Institute, Inc.  
P.O. Box 59  
Saranac Lake, N.Y. 12983  
*An Equal Opportunity Employer*

## POSITIONS OPEN

### FULL-TIME FACULTY POSITION

The Columbia College, Science Department, is seeking candidates for a full-time faculty position. This position is a 10-month appointment with teaching duties to include 12 credit hours per semester. Some administrative duties will be involved.

The Science Department is designed to teach courses to arts and communication students by incorporating projects in which they can use the tools of their majors. The curriculum focuses on the development of an understanding of scientific principles especially as they apply to the student's field of concentration. In addition, courses on science policy, and science and social issues are integral parts of the curriculum.

We prefer candidates with: A Ph.D. in the natural or physical sciences; teaching experience, preferably to nonscience majors; and interest and experience in science policy and science for the citizens.

Columbia College is an open admissions institution specializing in the arts and communications fields.

Deadline for applications: 13 July 1984. Apply to: **Columbia College Science Department, 600 South Michigan Avenue, Chicago, Ill. 60605.**

*Equal Opportunity/Affirmative Action Employer*

**MEMBRANE BIOCHEMIST:** Postdoctoral position for a membrane biochemist in the area of cardiac sarcoplasmic reticulum. Work involves studies of the molecular mechanism of hormonal regulation of calcium transport. Send résumé and references to: **Dr. Adil E. Shamoo, Membrane Biochemistry Research Laboratory, Biological Chemistry, Room 2-015, Bressler Building, 660 West Redwood Street, Baltimore, Maryland 21201. An Equal Opportunity Employer.**

We are seeking two candidates with a strong research interest and background in **MOLECULAR BIOLOGY** for immediate appointment at the assistant professor level. Appointees will be expected to develop active and distinctive research programs and to participate in graduate and medical student teaching programs. Candidates using recombinant DNA techniques to examine genetic regulation, membrane function and biosynthesis, development, chromatin structure or other aspects of cellular structure and function in microbial or eukaryotic organisms are invited to apply. Applicants should send curriculum vitae and the names of three references to: **Dr. Thomas C. Vanaman, Chairman, Department of Biochemistry, University of Kentucky, Lexington, Ky. 40536-0084, by 31 July 1984. An Equal Opportunity Employer.**

**PLANT PHYSIOLOGY,** postdoctoral position is available, starting August 1984, in physiology of plant growth and development. Send curriculum vitae and two letters of recommendation to: **Professor M. J. Jaffe, Code 8, Biology Department, Wake Forest University, P.O. Box 7325 Reynolds Station, Winston-Salem, N.C. 27109. Wake Forest University is an Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE.** Position immediately available in a group interested in the molecular basis of X chromosome inactivation. Studies utilize protein chemistry, somatic cell genetics, immunologic and recombinant DNA methods. Biochemistry and/or molecular biology experience essential. Reply to: **T. Mohandas or L. J. Shapiro, Departments of Pediatrics and Biological Chemistry, Harbor-UCLA Medical Center, 1124 West Carson, Torrance, Calif. 90502.**

The Department of Psychology, Columbia University, announces a 2- or possibly 3-year **POSTDOCTORAL POSITION IN VISUAL PSYCHOPHYSICS** beginning September 1984. We seek a candidate with an interest in simple mathematical models, preferably in the field of adaptation, to work with Professor Donald Hood. Candidates should send a copy of their curriculum vitae and the names of three individuals who are willing to write letters of recommendation to: **Personnel Search Committee (Postdoctoral Search), Department of Psychology, Box 29, Schermerhorn Hall, Columbia University, New York, N.Y. 10027. Columbia University is an Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

### FACULTY POSITION IN PHARMACOLOGY

Applications are invited for a tenure-track appointment as an assistant or associate professor in the Department of Pharmacology at the University of Tennessee Center for the Health Sciences (UTCHS). Applicants as assistant professor should possess the Ph.D., M.D., or other doctoral degree, have at least 2 years of postdoctoral experience, and have demonstrated ability to conduct an independent research program which applies modern constructs and methods of biochemistry, molecular biology, immunology, or genetics, to research problems in neurosciences as applied to pharmacology. Responsibilities include the development of an independent research program, and participation in the Pharmacology Department teaching programs. Applicants as an associate professor should have 5 years of experience and an established externally supported research program. Please forward curriculum vitae, a research proposal, and arrange three letters of reference to be sent to: **Dr. Murray Heimberg, Chairman, Department of Pharmacology, University of Tennessee Center for the Health Sciences, 874 Union Avenue, Memphis, Tenn. 38163.** Inquiries should be received prior to 15 July 1984, for a position available immediately. *UTCHS is an Equal Opportunity/Affirmative Action Employer.*

**MOLECULAR VIROLOGY—RESEARCH ASSOCIATE.** Two positions available fall 1984 for postdoctoral scientists to participate in studies of pathogenic RNS virus gene expression and function using recombinant DNA technology. Reply before 1 August with curriculum vitae and names and addresses of three references. **Dr. G. W. Wertz, Department of Microbiology and Immunology, University of North Carolina, Chapel Hill, N.C. 27514. The University of North Carolina is an Equal Opportunity/Affirmative Action Employer.**

**PHARMACOLOGIST.** Applications are invited for a new tenure-track faculty position in the Department of Pharmacology, University of South Carolina School of Medicine. Ph.D. and/or M.D. degree and postdoctoral experience required. The successful candidate will be expected to develop an independent research program which merits extramural support and to teach medical/graduate students. Preference will be given to individuals whose research interests are compatible with current faculty, that is, metabolic control mechanisms and biochemical mechanisms of drug action. Individuals should submit curriculum vitae, statement of professional goals, and the names of three references to: **Dr. D. O. Allen, Chairman, Department of Pharmacology, School of Medicine, University of South Carolina, Columbia, S.C. 29208. The University of South Carolina is an Equal Opportunity/Affirmative Action Employer.**

**PLANT MOLECULAR GENETICIST:** Applications are invited for a faculty position at the assistant or associate professor level in the Department of Vegetable Crops, University of California, Davis. We are seeking a molecular geneticist to address important problems in higher plant biology. Potential research areas might include gene expression, genome organization or gene transfer. The appointee will exploit the extensive tomato genetic resources available in the department and will be expected to contribute to the campus-wide program in molecular biology. This position is an 11-month, tenure-track appointment with commitments of 15 percent teaching and 85 percent research. Qualifications include a Ph.D. in genetics, molecular biology, or other closely allied discipline with training in molecular genetic techniques. Teaching and advising responsibilities will be within the appointee's area of specialization. Training of graduate students will be a significant responsibility. Applicants should submit curriculum vitae with a bibliography, reprints of pertinent publications, a statement of research and teaching interests, transcripts, and the names and addresses of at least three references to: **Dr. D. J. Nevins, Chair, Department of Vegetable Crops, University of California, Davis, California 95616.** Applications deadline is 30 September 1984. Position available: 1 December 1984. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION:** Protein chemistry and/or immunochemistry background. This person will provide the biochemical expertise for a small team developing synthetic membrane-bound ion-channel receptors. Experience with cross-linking or affinity labeling and lipid membranes would be helpful. This position is for an independent, self-motivated scientist. It is an academic research position in a major university in western New York.

**Box 160, SCIENCE**

# NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

The Cardiac Diseases Branch, Division of Heart and Vascular Diseases, National Heart, Lung, and Blood Institute, is inviting applications for a staff position in the extramural program to participate with clinician and nonclinician scientists in the implementation of national objectives in cardiologic research.

The Cardiac Diseases Branch is responsible for planning and administration of cardiac disease-oriented research in both clinical and fundamental areas. Major targeted programs in ischemic heart disease are the Thrombolysis in Myocardial Infarction Study (TIMI), a multicenter clinical trial of thrombolytic therapy in acute myocardial infarction, the Multicenter Investigation of the Limitation of Infarct Size (MILIS), the Coronary Artery Surgery Study (CASS), the NHLBI Percutaneous Transluminal Coronary Angioplasty Registry, the Specialized Centers of Research in Ischemic Heart Disease (multidisciplinary investigations of fundamental principles and clinical applications in ischemic heart disease), and fundamental studies of sudden cardiac death and lethal arrhythmias.

Applicants must have the M.D. degree or equivalent and experience in research. A background in cardiovascular research is desirable.

Appointment will be made in the federal civil service or the U.S. Public Health Service Commissioned Corps. Salary and benefits will be commensurate with qualifications and method of appointment. A qualifying candidate in the civil service would receive a minimum of \$44,242 and may be eligible for a comparability allowance up to \$10,000 per year.

Those interested in being considered for this position should submit their Personal Qualifications Statement (SF-171) which is available in Federal Personnel Offices and Federal Job Information Centers, along with a Curriculum Vitae and Bibliography by July 9, 1984 to Ms. Donna Brooks, NHLBI Personnel Office, National Institutes of Health, Public Health Service, 9000 Rockville Pike, Building 31, Room 5A-34, Bethesda, MD 20205, or call (301) 496-6477.

*NIH is an Equal Opportunity Employer*

## Biophysical Chemist

The Novel Drug Delivery System group at Pfizer Central Research has an opening for an individual with a Ph.D. in biophysical chemistry, physical organic chemistry, chemical engineering, or pharmaceuticals, and an interest in the development of polymeric drug delivery systems. You will join a multidisciplinary team devoted to the development of controlled release dosage forms of human and veterinary applications. You will be expected to participate in ongoing programs as well as initiate new avenues of investigation. One potential area of research includes the design and evaluation of particulate systems for oral and injectable applications, the evaluation and characterization of the tissue response to such systems, and the development of methodology to reproducibly manufacture these forms.

This position offers an excellent opportunity for professional recognition and career growth. Publication of important findings will be encouraged. We also offer competitive compensation, benefit package and the opportunity to live in an attractive Connecticut shore community. Please send resume and description of research accomplishments to: Jerry K. Larson, Ph.D., Manager of Employment, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.



An equal opportunity  
employer

## DIRECTOR

### NATIONAL RADIO ASTRONOMY OBSERVATORY

Associated Universities, Inc. (AUI) invites nominations and applications for the position of Director of the National Radio Astronomy Observatory (NRAO). AUI, a non-profit corporation with headquarters in Washington, D.C., manages the NRAO for the National Science Foundation (NSF) and manages the Brookhaven National Laboratory for the Department of Energy.

NRAO, headquartered in Charlottesville, Va., has observing facilities at Green Bank, W. Va.; Tucson, Ariz.; and Socorro, N. Mex. The Director is the chief operating officer of the Observatory with primary responsibility for its program, both content and quality, and for its representation to NSF. He reports through the AUI President to the Board of Trustees.

Candidate should be a scientist of stature, with a close understanding of national developments in astronomy and demonstrated leadership and management ability. Applications or nominations are requested by July 15, 1984, but later inquiries may be considered.

Inquiries, nominations, or applications with supporting resumes should be directed to:

**Robert E. Hughes, President**  
Associated Universities, Inc.—Suite 603  
1717 Massachusetts Avenue, N.W.  
Washington, D.C. 20036

AUI is an Equal Opportunity/Affirmative Action Employer.



**Australian Government  
Department of Science  
and Technology**



## Director Antarctic Division

**(A\$52,550)**

The Australian Government is looking for an energetic executive to manage the Antarctic Division of the Department of Science and Technology which is located in Hobart, Tasmania. The position will appeal to people seeking a challenge and interested in directing Australia's research and exploration in Antarctica.

The Antarctic Division administers, organises and provides logistic support for Australian activities in Antarctica including the operation of Antarctic and sub-Antarctic stations. The Director is responsible for the Division's activities, including policy advice to the Government.

The successful applicant should have demonstrated managerial ability at a senior level, and be able to represent and promote Australia's scientific role in Antarctica at international forums. Experience in the type of operations carried out by the Antarctic Division and knowledge of and/or participation in polar research is desirable.

Remuneration is A\$52,550 a year plus an expense of office allowance of A\$1,250 a year. Conditions of employment include four weeks annual leave with bonus payment, cumulative paid sick leave and long service leave. The successful applicant will be eligible for assistance with relocation expenses and housing.

Hobart (population 175,000) is the capital of Tasmania, the island State of Australia. With a temperate maritime climate, Hobart offers a relaxed style of life with city amenities and housing costs are amongst the lowest in Australia.

Detailed applications should be sent to:

The Recruitment Officer  
Department of Science and Technology  
PO Box 65 Belconnen ACT 2616  
Australia  
by July 20, 1984.

# Scientist/Sr. Scientist

## Molecular Biology

Genentech, Inc., on the SAN FRANCISCO PENINSULA, is a rapidly growing and recognized leader in the field of genetic engineering and biotechnology research. Our Molecular Biology Department has an opening for a Scientist (Yeast Geneticist) to be involved in improving heterologous gene expression and protein secretion in yeast. The successful applicant will be involved in designing and implementing novel genetic approaches to yield improvement of specific protein products in conjunction with molecular biology personnel, supporting our existing genetics program, and participating in ongoing research to better understand the mechanisms associated with these cellular processes.

Candidate should have 4-5 yrs. exp. with the genetics of *Saccharomyces cerevisiae*, knowledge of other yeast genera and species, as well as familiarity with the yeast secretion pathway. Position requires PhD and ability to work in a team-oriented environment.

Genentech offers excellent salaries and benefits. Please send resume to Human Resources Dept. #4047, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. An equal opportunity employer.

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## POSITIONS OPEN

### POSTDOCTORAL FELLOW

Merck, Sharp and Dohme Research Laboratories is seeking a postdoctoral fellow to study cell surface-extracellular matrix interactions with immunoelectron microscopy, starting 1 September 1984. This position will be in the Department of Experimental Pathology under the direction of Dr. Irwin Singer.

The successful candidate must have a Ph.D. in electron microscopy and scientists with additional experience in the biochemistry of extracellular matrix, cytoskeleton, or cell membrane will be given preference.

Salary range is \$22,000 to \$23,500 per year. Send résumé to:

S. R. Jenkins  
Merck & Company, Inc.  
P.O. Box 2000  
Rahway, N.J. 07065

An Equal Opportunity Employer

**POSTDOCTORAL POSITION** available immediately to study three-dimensional architecture of chromosomes using optical and electron microscopy and computerized, three-dimensional reconstruction schemes. The candidate should have strong background in computer science/computer graphics and/or macromolecular crystallographic experience. Send résumé with names of three references to: Dr. David A. Agard or Dr. John W. Sedat, Department of Biochemistry and Biophysics, University of California, San Francisco, California 94143.

**POSTDOCTORAL POSITIONS** (two) immediately available for study of mammalian cell-surface interactions, cell proliferation, and cell locomotion. Candidates must have a solid background in biology/biophysics; some experience in tissue culture is desirable. Competitive salary. Send curriculum vitae, names of three references, and availability date to: Dr. Ivar Giaever, National Foundation for Cancer Research Regional Laboratory, CRD K-1, Room 3C36, P.O. Box 8, Schenectady, N.Y. 12301. *Equal Opportunity Employer, M/F.*

**POSTDOCTORAL POSITION** available immediately to study metabolism and associated toxicity of volatile inhalation anesthetics. Experience in protein and particularly cytochrome P-450 biochemistry desirable. Send résumé and names of references to: Dr. L. Kaminsky, Center for Laboratories and Research, New York State Department of Health, Albany, N.Y. 12201. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITIONS, MOLECULAR GENETICS**, available immediately. One to study the expression and replication of the virus-like dsRNA killer plasmids of *Saccharomyces cerevisiae*. Major focus on protein secretion from killer cDNA vectors. Other to study cloning and expression of *Bacillus subtilis* genes expressed uniquely in one cell compartment in late sporulation. DNA cloning and/or protein chemistry experience desirable. Salary commensurate with experience. Send curriculum vitae and three references to: Donald J. Tipper, Ph.D., Department of Molecular Genetics and Microbiology, University of Massachusetts Medical School, Worcester, Mass. 01605. *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION:** The Dana-Farber Cancer Institute is seeking to fill one research position at the postdoctoral level to study the molecular mechanism of differentiation of cultured embryonic teratocarcinoma stem cells. Potential projects concern the study of gene structure and the developmental control of gene expression. Strong background in biochemistry, developmental biology, or molecular biology required. Joint appointment will be held in an appropriate department at Harvard Medical School. Send curriculum vitae and names of three references to: Dr. Lorraine Gudas, Dana-Farber Cancer Institute, 44 Binney Street, Boston, Mass. 02115. *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available July 1984 to join a team working on the structure and pathology of skeletal connective tissues. Aims include understanding the function of collagen cross-linking amino acids in cartilages. Experience in connective tissue biochemistry desirable. Joint appointment at Harvard Medical School and Children's Hospital. Apply with curriculum vitae and names of three referees to: Dr. David Eyre, Laboratory for Skeletal Disorders, Children's Hospital, 300 Longwood Avenue, Boston, Mass. 02115. *An Equal Opportunity Employer.*

## POSITIONS OPEN

**POSTDOCTORAL POSITION** in cell membrane and receptor studies of gastrointestinal hormones and cholinergics or in cancer immunology (for example, glycoprotein antigenicity) as part of multidisciplinary program in pancreatic carcinogenesis. Send curriculum vitae, three letters of recommendation to: Dr. Parviz Pour, Eppley Institute for Research in Cancer, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, Neb. 68105.

**POSTDOCTORAL POSITION.** Available 1 July 1984 or thereafter, to study the structure and biological role of a new class of transfer RNA's present in mammalian cells. Send curriculum vitae and three letters of recommendation to: Professor B. Dudock, Department of Biochemistry, State University of New York (SUNY), Stony Brook, Stony Brook, New York 11794-5215. *SUNY, Stony Brook, is an Affirmative Action/Equal Opportunity Educator and Employer.* AK 109-84.

**POSTDOCTORAL POSITION** in hematology research, Children's Hospital, Harvard Medical School, for a Ph.D. immunologist to study cellular and hormonal aspects of hematopoiesis. Experience with hybridoma methods, cell culture, and immunocytochemistry preferred. Send résumé and three references to: Dr. Arthur J. Sytkowski, Children's Hospital, 300 Longwood Avenue, Boston, Mass. 02115. *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available to study mechanisms of gene regulation by steroid hormones and their receptors. Background in molecular biology and/or DNA technology is preferred. Send curriculum vitae and names of two references to: Magnus Pfahl, Ph.D., La Jolla Cancer Research Foundation, 10901 North Torrey Pines Road, La Jolla, Calif. 92037. *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION IN MEMBRANE BIOCHEMISTRY.** Available July 1984; \$15,000 to \$20,000. Studying H<sup>+</sup>-translocating ATPase of *Escherichia coli*. Focus on structure/function and chemistry of H<sup>+</sup>-translocation mechanism. Approaches/training in protein chemistry, physical biochemistry, recombinant DNA, and site-specific mutagenesis applicable. Contact: Dr. R. H. Fillingame, Department of Physiological Chemistry, University of Wisconsin, Madison, Wis. 53706. *Affirmative Action/Equal Opportunity Employer.*

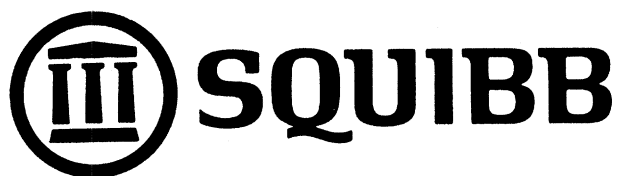
**POSTDOCTORAL POSITION** available to study molecular aspects of hereditary human disease. Experience in recombinant DNA technology preferred. Send application with curriculum vitae and the names, addresses, and telephone numbers of three references to: Lynne Maquat, Ph.D., Department of Human Genetics, Roswell Park Memorial Institute, 666 Elm Street, Buffalo, N.Y. 14263.

**POSTDOCTORAL POSITION IN BIOCHEMISTRY** available immediately for individual with strong enzymology/protein chemistry background. Research will involve enzyme structure/function relationships with emphasis on protein sequence analysis. Knowledge of kinetic analysis and peptide/protein isolation techniques, including HPLC, is highly desirable. Send résumé and the names of two or three references to: Dr. Louis F. Hass, Department of Biological Chemistry, The M.S. Hershey Medical Center of The Pennsylvania State University, Hershey, Pa. 17033. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL RESEARCH ASSOCIATE/CELL BIOLOGY—PHARMACOLOGY** positions available in 3-year study of infection and inflammation of periodontal tissues. Experience in electron microscopy morphometrics, immunocytochemistry, LM autoradiography, and/or subcellular fractionation, enzyme assays, RIA's, and tissue culture desired. Send curriculum vitae and names of three references to: Dr. Steven Hoff, Department of Pharmacology, The Chicago Medical School, 3333 Green Bay Road, North Chicago, Ill. 60064. *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL RESEARCH POSITION** available immediately for recent Ph.D. or M.D. with a strong background in molecular biology/genetics of animal viruses. Candidates with excellent academic records, some experience in DNA technologies, including cloning, and a strong interest in tumor virology will be given preference. Please send résumé, abstract of the thesis along with other evidence of scholarly productivity, and the names and telephone numbers of three referees to: Nurul H. Sarkar, Ph.D., Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, N.Y. 10021.





## R&D DIRECTOR Japan

Squibb, a major international pharmaceutical company, currently is seeking candidates for the position of R&D Director in its Japanese affiliate with offices in Tokyo. The Director must provide strong intellectual and administrative leadership to a staff of about 50 scientists who have responsibility for the registration in Japan of new human ethical and animal health products. In meeting these responsibilities, the department monitors Japanese regulatory requirements, oversees preclinical and clinical studies conducted in Japan, and prepare the necessary registration documents. Throughout this process, close liaison is maintained with the central research laboratories in the United States.

The successful candidate will have at least 15 years experience in the health care field after receiving an MD or PhD degree (or equivalent) and must be fluent in both Japanese and English.

Interested candidates should send their current resume directly to: **Mrs. Anne V. Corey, International Personnel Director, Squibb Corporation, P.O. Box 4000, Princeton, NJ 08540.** An equal opportunity employer.

## NATIONAL INSTITUTE OF ARTHRITIS, DIABETES, AND DIGESTIVE AND KIDNEY DISEASES OFFICE OF THE DIRECTOR

## DIRECTOR DIVISION OF DIGESTIVE DISEASES (and Associate Director for Digestive Diseases)—Dual Position

Incumbent must be a recognized and respected leader in the field of digestive diseases related research, with experience and expertise in the development of new knowledge and new technology in digestive diseases. Responsibilities include identifying research needs and opportunities; planning, developing and implementing a high quality extramural research and research training program in the field; and conducting laboratory investigations in digestive diseases related research.

**Salary Range—\$58,938 to \$66,400 per annum**

Position information, SF-171 (application), and qualifications requirements may be obtained by contacting:

**Mr. Clifford Moss, Executive Secretary  
Search Committee for Director,  
Division of Digestive Diseases  
Building 31, Room 9A34  
National Institutes of Health  
Bethesda, Maryland 20205  
(301) 496-4231**

Applications must be postmarked no later than July 31, 1984.

**AN EQUAL OPPORTUNITY EMPLOYER**

## CSIRO

AUSTRALIA

BIOCHEMIST

A\$25,342 to A\$37,274

DIVISION OF PLANT INDUSTRY  
CANBERRA, ACT

CSIRO conducts scientific and technological research in laboratories located throughout Australia and employs about 7500 staff, of whom some 2900 are professional scientists. The Organization's research activities are grouped into five Institutes: Animal and Food Sciences, Biological Resources, Energy and Earth Resources, Industrial Technology and Physical Sciences. The CSIRO Division of Plant Industry is a member of the Institute of Biological Resources.

**FIELD: Photosynthesis.**

**GENERAL:** The Division conducts fundamental and applied research on problems relevant to plant biology and agricultural production. One research program is concerned with photosynthetic processes: the molecular organization and regulation of photosynthetic membranes, the mechanism and significance of  $C_4$  pathway of carbon dioxide fixation and primary productivity in aquatic ecosystems.

**DUTIES:** To undertake research on the relationship between the molecular organization of chlorophyll-protein and electron transport complexes, thylakoid membrane structure and photosynthetic capacities in plants adapted to different light climates or stressed conditions. The aim is to determine what regulates and potentially limits photosynthetic yield as a prerequisite to understanding how crop production might be improved.

**QUALIFICATIONS:** A Ph.D. degree or equivalent qualifications in an appropriate field with relevant research experience.

**TENURE:** A term of 3 years. Australian Government superannuation benefits are available.

**APPLICATIONS:** Stating full personal and professional details, the names of at least two referees, and quoting Reference Number A4715, should be directed to:

**The Chief  
CSIRO Division of Plant Industry  
G.P.O. Box 1600  
Canberra, ACT 2601  
Australia**

by 27 July 1984.

*CSIRO is an Equal Opportunity Employer*

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☐ \$158 air-surface delivery via Holland

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## POSITIONS OPEN

### POSTDOCTORAL AND PREDOCTORAL POSITIONS AVAILABLE IMMEDIATELY

in cellular, subcellular, and molecular physiology and biophysics, with emphasis in cardiovascular physiology, electrophysiology, membrane biophysics, contractile mechanisms, neurophysiology, cellular physiology, mechanism of thrombosis, renal physiology, transport, and reproductive endocrinology, vascular smooth muscle electrophysiology, and pharmacology.

For further information, please write to:

**Dr. Nicholas Sperelakis**  
Department of Physiology and Biophysics  
University of Cincinnati  
College of Medicine  
Cincinnati, Ohio 45267-0576

**POSTDOCTORAL OR RESEARCH ASSOCIATE POSITION** available for an individual to join a group pursuing molecular aspects of bovine rotavirus, coronavirus, and herpesviruses. Experience in some of the following areas is necessary: monoclonal antibodies, biochemistry, molecular virology, gene mapping, sequencing, cloning, or gene expression in eukaryotic or prokaryotic systems. Opportunity for industrial, academic, and government interaction with a possibility of permanent employment.

Salary: \$21,000.

Send résumé and list of three references to:

**Dr. L. A. Babiuk**  
Department of Veterinary Microbiology  
University of Saskatchewan  
Saskatoon, Saskatchewan, Canada S7N 0W0  
Telephone: 306-343-5536

**POSTDOCTORAL RESEARCH SCIENTIST** position available immediately to Ph.D. The individual will use biochemical/immunocytological methods to study catecholamine systems in the brain. Experience with basic morphological and biochemical techniques is desirable. Competitive salary. Application should include curriculum vitae, list of publications, and names of two references. Send applications to: **Dr. Csaba Vadasz, Nathan Kline Institute, Orangeburg, N.Y. 10962.**

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH ASSOCIATE:** Position open in the Biomedical Engineering Laboratory, a laboratory dedicated to interdisciplinary biorheological research involving personnel of Rice University and those of Texas Medical Center. Candidates should have training in biophysics, bioengineering, biochemistry, or related fields. The research program is on the response of blood platelets to shear stress at known, controlled levels applied by use of rheological equipment. The focus is on the biochemical mechanism of platelet response. There may be openings in several other biorheological projects. Inquiries should be sent to: **J. D. Hellums, Dean of Engineering, Rice University, P.O. Box 1892, Houston, Texas 77251.**

**POSTDOCTORAL/RESEARCH ASSOCIATE POSITIONS** (two) available for neurobiologist interested in studying visual system organization in primates. One position is for a scientist interested in early development. Persons should have experience with antibody-based and immunohistochemical techniques. Experience in electromicroscopy desirable. The other position is for a scientist interested in structure/function correlations. Individuals should have experience in single unit recording techniques. Experience in basic anatomical tracing techniques is desirable. Send curriculum vitae and names of three references to: **Dr. V. A. Casagrande, Department of Anatomy, Vanderbilt University, Nashville, Tenn. 37232.**

**TWO POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS** available beginning 1 September 1984 to study molecular biological aspects of vaccinia virus replication. Ph.D. and background in recombinant DNA and/or nucleic acid sequencing procedures are required. Salary range is \$14,000 to \$19,000 per year, commensurate with experience. Send letter of application, curriculum vitae, and three letters of reference to: **Dr. Dennis E. Hruby, Center for Gene Research, Department of Microbiology, Oregon State University, Corvallis, Ore. 97331-3804, before 31 July 1984. Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.**

## POSITIONS OPEN

### PUBLIC HEALTH MEDICAL OFFICERS

California State Department of Health Services is recruiting physicians. Openings in Sacramento and Berkeley are anticipated over the next 2 years in many public health areas. Civil service exams will be conducted early September 1984 for the categories of Public Health Medical Officer (PHMO) II, III, and III-Epidemiology. California licensure is required prior to hiring but only licensure eligibility is needed to compete. Salary for PHMO II starts at \$49,872; for PHMO III and III-Epidemiology at \$54,852. Résumés should be sent by 31 August 1984 to: **Robin Kubochi, Department of Health Services, Health Protection Division, 714 P Street, Sacramento, Calif. 95814.** Upon receipt of résumé, further information will be provided. *Equal Opportunity Employer.*

**RESEARCH ASSOCIATE** with the Mineral Metabolism Research Unit, National Animal Disease Center, U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Ames, Iowa. Temporary federal appointment—1 year, may be extended. Candidate will work on cloning of cDNA's corresponding to 1,25-dihydroxyvitamin D-regulated messenger RNA's. Ph.D. desirable. Position requires experience in molecular biology/recombinant DNA techniques and skill in preparation and characterization of cDNA. Salary: GS-11, \$25,489. For applications: **Jerrie Brooks, USDA-ARS-B88, Personnel Operations Branch, Building 003, Room 318H, BARC-West, Beltsville, Maryland 20705. Telephone: 301-344-4567.** Candidates must be U.S. citizens. *An Equal Opportunity Employer.*

### RESEARCH ASSOCIATE/ASSISTANT

Multidisciplinary diabetes research laboratory has two positions available for individuals to participate in work-intensive program involving isolation of lower mammalian and human pancreatic islets for transplantation. Applicants must have experience in cell separation procedures and tissue culture. Immunology background highly desirable.

Send curriculum vitae and three letters of recommendation to: **Daniel H. Mintz, M.D., Department of Medicine (R134), University of Miami School of Medicine, P.O. Box 016960, Miami, Florida 33101.**

## BATTELLE-KETTERING SENIOR POSITIONS

Battelle-C.F. Kettering Research Laboratory, located in Yellow Springs, Ohio, has two research positions available. The laboratory's research programs are oriented toward increasing agriculture productivity through research in the general areas of symbiosis, nitrogen fixation and photosynthesis.

One position requires a PhD in molecular genetics with related experience in appropriate bacterial and/or plant sciences. A PhD in plant sciences and five years experience is required for the second position which will serve to complement our current expertise and on-going research activities. The successful applicants will be expected to support their research efforts by obtaining externally funded grants and contracts.

Battelle offers a competitive salary, excellent employee benefits, and career growth opportunities. Applicants with appropriate interests and expertise should send their resume to Richard Shaw, Employment Department T-2



**Battelle**

**Memorial Institute**

**505 King Avenue • Columbus, OH 43201**

*An Equal Opportunity/Affirmative Action Employer*

## PROJECT MANAGER TEN METER TELESCOPE University of California

Applications are invited for the current opening of Project Manager (PM) for the University of California Ten Meter Telescope (UC TMT). The PM will have overall project responsibility for planning, engineering design, cost estimation, scheduling, and budget management for procurement, fabrication, and construction during the design and construction phases of the TMT and related facilities. In the determination of design and performance specifications, and the development of engineering design concepts, the PM will work in close cooperation with the Project Scientist.

Applicants should have demonstrated ability to complete major projects on time and within budget. Experience in the development of stand-alone research facilities is valuable. Knowledge of electro-mechanical and optical systems, computer environments, structural engineering, and laboratory research facility designs is desirable. Experience as manager of major research construction projects is a requirement. Applicants with degrees in engineering or physical sciences are preferred.

The PM will be an Associate Director of Lick Observatory reporting to a UC Executive Management Committee (EMC). Salary will be commensurate with experience and qualifications.

Applicants should send resume and the names of three persons who have been asked by the applicant to submit letters of professional reference directly to the Chair. All application materials should be received by September 15, 1984 and sent to:

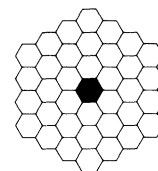
**Dr. Harold Ticho**

TMT/EMC Chair

c/o Lick Observatory

University of California

Santa Cruz, California 95064



*An EEO/AA Employer*

## Immunodiagnosics Laboratory Manager

### Product Research & Development

Develop and lead a first-class team of scientists in new immunodiagnosics technology.

Covalent Technology Corp., a rapidly growing subsidiary of KMS Industries has developed a new technique for immunodiagnostic assays. Our research and new product development efforts are accelerating, and now is the ideal time for you to be part of our achievement. We are seeking an energetic, innovative research scientist of the highest caliber to direct and implement our research program.

You should have a Ph.D., M.D., or both, in biochemistry, immunology, pathology or physical chemistry and extensive experience in overall administration of a multiple-group laboratory working in hormone analysis and/or infectious diseases. Experience working with government laboratories preferred. You must have a national reputation and proven expertise in innovative concepts in laboratory medicine.

Competitive compensation package. United States citizenship is required. Send your resume and salary history to: **A.J. Procassini, Code CTC-3, KMS Industries Inc., Box 1778, Ann Arbor, MI 48106-1778.** An equal opportunity employer, M/F.



## SYNTRO CORPORATION

### A LEADER IN AGRICULTURAL BIOTECHNOLOGY,

Syntro is concerned with the challenge of today's agricultural problems, and is dedicated to the successful application of biotechnology to those problems. Our newly expanded facilities are geared to meet the needs of our staff; providing a creative research environment in the heart of Southern California's scientific community. Our beautiful coastal setting allows a unique opportunity for personal and professional growth.

Syntro is currently seeking qualified individuals with expertise in the following areas:

**MOLECULAR BIOLOGY** — familiar with all aspects of recombinant DNA technology: gene isolation, cloning, expression and regulation.

**VIROLOGY** — having a working knowledge of viral cloning systems. Experience with animal viruses and recombinant DNA technology is desirable.

Syntro offers a competitive compensation package. If you would like to be part of this outstanding biotechnology group, please send resume with a list of references to:

Personnel Director  
**Syntro Corporation**  
10655 Sorrento Valley Road  
San Diego, CA 92121

AN EQUAL OPPORTUNITY EMPLOYER

## APPLICATIONS SPECIALIST

Amersham Corporation, a leading supplier of radiochemicals to research institutions, has an immediate expansion opening for a self starter to establish and run our new applications laboratory. You will need M.S. Biochemistry, Molecular Biology, or Cell Biology including direct laboratory experience with molecular biology techniques, (nicked translation, DNA sequencing, cloning, etc.) Your responsibilities as applications specialist will include establishing protocols for the use of Amersham molecular biology products. We are offering a competitive starting salary and an attractive benefits package including savings/profit sharing, dental insurance, tuition aid, and an exercise facility.

For prompt consideration, please submit your resume to:

C. L. Bernacchi  
Employment Manager  
**AMERSHAM  
CORPORATION**  
2636 S. Clearbrook Drive  
Arlington Heights, IL 60005  
An Equal Opportunity Employer M/F

**Amersham**

## BS/MS CELL BIOLOGISTS

The Cell Biology Unit of the Biotechnology Group at The Upjohn Company has positions immediately available to investigate the evolution and expression of growth regulated genes in mammalian cells, and to explore the biochemical characteristics of immune regulatory molecules and cell surface receptors.

BS and MS applicants are currently being sought with research experience in recombinant DNA and mammalian cell and tissue culture techniques, or in protein biochemistry and immunological methods. Experience in the operation and programming of computers is desirable.

Upjohn offers a stimulating research environment, opportunity for career growth, and competitive salary and benefits. Kalamazoo is a mid-sized Michigan community, providing a rich mix of cultural, educational, and recreational pursuits.

For confidential consideration, please call from outside Michigan toll-free 1-800-253-8600, ext. 3-6767, or inside Michigan collect 616-323-6767 to request an employment application be sent to you immediately. Please refer to Ad Number 16580-J when calling.

**Upjohn**

**A century of caring**

An Equal Employment Opportunity Employer M/F

## POSITIONS OPEN

**PROTEIN SEQUENCER:** A staff position is available to operate a protein sequencing facility within the Howard Hughes Medical Institute at Duke University Medical Center. Applicants with prior experience in gas phase sequencing and HPLC techniques will be given preference. Send curriculum vitae to: **Brenda Evans, Business Manager, Howard Hughes Medical Institute, P.O. Box 3287, Duke University Medical Center, Durham, North Carolina 27710.**

### RESEARCH ASSISTANT

Research assistant needed for research team involved in the study of light energy storage by chlorophyll, with minimum of 2 years of postdoctoral research experience in chlorophyll studies who will be responsible for carrying out laser photolysis investigations of in vitro model systems. Successful applicant must have excellent recommendations and preference will be given to applicants with laser photolysis experience or similar techniques experience. Forty-hour work week, 8:00 to 5:00, salary \$14,500 per year with no overtime. Ph.D. required in chemistry, biology or physics with 2 years of experience in chlorophyll studies. Qualified applicants send résumé or application letter to: **Arizona Department of Economic Security Job Service, Attention: 732-A, Re: 0801439, P.O. Box 6123, Phoenix, Ariz. 85005.** Job location: Tucson; employer-paid ad; proof of authorization to work in U.S. required; list in résumé or application letter.

**RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW** sought for 1 August 1984 to participate in studies on the role of insulin receptor tyrosine kinase and regulatory protein phosphorylation in insulin action. Experience preferred in the area of reconstitution of membrane proteins, cell fusion, protein chemistry, or immunologic techniques. Curriculum vitae and three references required. Salary: \$17,000 to \$20,000 per year, depending on experience. Contact: **J. Avruch, Howard Hughes Medical Institute Laboratory, Diabetes Unit, Massachusetts General Hospital, Boston, Mass. 02114, or telephone: 617-726-2874.**

### UNIVERSITY OF WATERLOO DEPARTMENT OF BIOLOGY NSERC UNIVERSITY RESEARCH FELLOWS

The Department of Biology, University of Waterloo, invites applications for NSERC University Research Fellowships in the following areas of research interest: (i) population genetics with emphasis on the genetic structure and dynamics of real as opposed to theoretical populations, (ii) nucleic-acid chemistry with emphasis on either in vitro DNA synthesis or site-specific mutagenesis, and (iii) protein chemistry with emphasis on immunological analyses. Applications in other areas will also be given serious consideration. Successful candidates will be expected to establish a vigorous research program and participate in teaching both undergraduate and graduate students. A curriculum vitae including names of three referees should be sent to: **Dr. J. E. Thompson, Chairman, Department of Biology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.** Prospective candidates should examine the NSERC Awards Guide 1984-1985, paragraph 186 on page 52 for details. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

**RESEARCH POSITION AVAILABLE** in the Radiation Oncology Department of the University of California, San Francisco (UCSF). Salary: \$1698 to \$2042 per month. You will work on mammalian cell culture experiments and coordinate use of space, equipment, supplies, and technical personnel. Requirements include a B.S. degree in science and 2 years of experience in cell culture techniques. **Telephone: Drs. W. C. Dewey or R. Wong at 415-666-2461** or send résumé to: **Department of Radiation Oncology, UCSF, CED-200, San Francisco, Calif. 94143.** *An Equal Opportunity Employer.*

**VERTEBRATE BIOLOGIST.** Unity College in Maine seeks an assistant professor with Ph.D. and a strong background in the ecology of small mammals to fill a permanent position starting 1 January 1985. Applicants must have outstanding teaching skills and demonstrated record of research and publication. Teaching duties include general zoology, mammalogy, ornithology, animal behavior, and evolution. Send letter of application, curriculum vitae, and names and telephone numbers of three references before 15 September 1984 to: **R. Terry Bowyer, Chairman, Vertebrate Biologist Search Committee, Center of Environmental Sciences, Unity College, Unity, Maine 04988.**

## POSITIONS OPEN

**RESEARCH ASSISTANT (TWO)**—Cetus Corporation is currently seeking candidates for positions involving recombinant DNA manipulation and gene expression. These positions require a minimum of 5 years of demonstrated exceptional ability in the following areas:

Nucleic acid enzymology including process fermentation, purification, assay, and use of nucleic acid enzymes; isolation and purification of chromosomal DNA, plasmid DNA, and DNA fragments; plasmid transformation; methods of analysis of nucleic acid and protein products including radiolabeling, "ELISA" assays, "Western" analysis preparation, and use of various antisera and antibody fragments and 1 and 2 dim. gel electrophoresis. Salary range is \$25,000 to \$30,000, depending on experience. Please send résumé in confidence to: **Cetus Corporation, Box SCI-000, 1400 Fifty-third Street, Emeryville, Calif. 94608.** *Equal Opportunity Employer, M/F/H.*

### RESEARCH ASSOCIATE

Qualified candidate to participate in the analysis and interpretation of cosmic ray observations on balloons. General knowledge of high energy astrophysics and background in advanced high energy detectors including transition radiation detectors are required as well as competence in large volume data analysis on computers. Requires a Ph.D. in physics. Education should include research on nuclear interactions and high energy phenomena in astrophysics, and independent study on experimental cosmic ray physics. Salary offer: \$19,086 per year, 40 hours per week, 8 a.m. to 5 p.m., Monday through Friday. Send résumé to: **Enrico Fermi Institute, University of Chicago, 5640 Ellis Avenue, Chicago, Illinois 60637, Attention: Director.**

### RESEARCH ASTROPHYSICIST

A private research foundation is seeking applicants with a minimum of a graduate education in computer science and astronomy, and a number of years of relevant research experience in astronomy and cosmic ray physics (or astrophysics), to conduct analytical studies involving a wide range of advanced statistical techniques. The successful candidate will also be responsible for the critical evaluation and quality control of data from a network of field stations, and will develop programs for transferring data-processing procedures from currently used computers to a new in-house VAX-based system. The initial appointment is for a period of 3 years, with a beginning salary in the range \$20,000 to \$23,000. Résumés and letters of recommendation should be directed to:

**Attention of R. J. Shiels  
Department of Labor  
Division of Job Services  
P.O. Box 9029  
Newark, Delaware 19711**

**STOCKROOM SUPERVISOR AND LABORATORY COORDINATOR.** 10-month continuing position. Requires strong college background in chemistry and biology and ability to do some laboratory instruction, supervise undergraduate assistants, and operate joint stockroom. Send letter and résumé to: **Kenneth P. Goodrich, Dean of Faculty, Linfield College, McMinnville, Oregon 97128, by 20 July 1984.** *An Equal Opportunity/Affirmative Action Employer.*

## REQUESTS FOR PROPOSALS

### REQUEST FOR PROPOSALS

The Lighting Research Institute, Inc., a not-for-profit organization formed to promote and sponsor basic and applied research and development in North America for all forms of lighting, is making its annual request for proposals based on its research agenda. Proposals are being sought for the following research areas with an emphasis on those areas which have direct human application:

**Photobiology; vision, systems application (engineering, physical sciences, and economic research in lighting systems); and psychology.**

**The deadline for receipt of proposals is 14 September 1984.** For a copy of the Institute's research agenda, proposal application, and/or further information, please contact:

**Richard L. Vincent  
Program Manager  
Lighting Research Institute  
345 East 47 Street  
New York, N.Y. 10017  
Telephone: 212-705-7918**

## WORKSHOPS

### WORKSHOP ON ABNORMAL CELLS, NEW PRODUCTS, AND RISK

Cosponsored by

**FDA, NCI, NIAID, NHLBI, and CDC  
will be held on 30 and 31 July 1984  
at the NIH in Bethesda, Maryland**

The meeting has been organized to review issues and data relating to the use of abnormal cells in the production of drugs and biologics. Particular attention will be focused on three areas: (i) residual cellular DNA in products; (ii) viruses endogenous to cell substrates; and (iii) residual cellular proteins in products. Discussions will follow the presentation of data, and there will be an attempt to develop consensus in each of the three areas during the afternoon of the second day. The Public Health Service Agencies cosponsoring this workshop believe it will assist them in making decisions on the support of research, the regulation of products, and the use of products derived from abnormal mammalian cells. The meeting is open to the public. However, individuals planning to attend should send their names and addresses to: **Mary Ann Tourault, Food and Drug Administration, 8800 Rockville Pike, Bethesda, Md. 20205,** so that additional information can be sent in advance of the meeting.

## TRAINING PROGRAMS

**CELLULAR AND MOLECULAR ASPECTS OF AGING**—Postdoctoral fellowships (two) supported by the National Institute on Aging available. Program provides a brief circulation through laboratories of cooperating institutions, an intense research apprenticeship, seminars, and limited support for attendance at scientific meetings. One-year appointment extendable to 2 years. Send résumé and three letters of recommendation to: **Arthur G. Schwartz, Ph.D., Institute On Aging, 083-52, Temple University, Philadelphia, Pa. 19122.** *An Equal Opportunity/Affirmative Action Employer.*

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### POSTDOCTORAL FELLOWSHIP

A postdoctoral position is available for candidates interested in neuroscience and vision research. Candidates with different backgrounds, including expertise in immunological methods, ultrastructural analysis, and protein biochemistry, will be considered. Stipend is \$20,000 per year. Send applications, including curriculum vitae, to: **Dr. H. Maisel, Department of Anatomy, Wayne State University School of Medicine, Detroit, Michigan 48201.** *Affirmative Action/Equal Opportunity Employer.*

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# Information for Contributors

## The Editors of *Science*

Papers in *Science* often receive far more attention than those in specialty journals. Hence the rate of submission is high, about 5000 papers each year, and the rate of rejection is high, about 80 percent. Since most of the papers submitted are of publishable quality, the editors use several criteria, in addition to the recommendations of referees, in selecting papers for publication. Preference is given to papers of general significance that are well written, well organized, and intelligible to scientists in different disciplines. An attempt is made to balance the subject matter in all sections of *Science*. Membership in AAAS is not a factor in selection.

Most papers are evaluated by two or more outside referees. Some papers may be returned to the authors without external review if they exceed the length limits or if they are judged unlikely to be chosen for publication. Referees are selected from *Science* files as well as from lists provided by authors. Papers that depend on statistical inference for their conclusions may also be sent to statisticians.

Papers accepted for publication are edited to improve the accuracy and effectiveness of communication and to bring them within the specified length limits. When the author's meaning is not clear, the editor may consult the author by telephone; when editing is extensive, the manuscript may be returned to the author for approval or further adjustment before the type is set.

Six types of signed papers are published: General Articles, Research Articles, Reports, Letters, Technical Comments, and Book Reviews.

### General Articles

About half the General Articles published in *Science* are solicited. Both solicited and unsolicited articles undergo review. General Articles are expected to (i) provide a review of new developments in one field that will be of interest to readers in other fields, (ii) describe a current research problem or a technique of interdisciplinary significance, or (iii) present a study of some aspect of the

history, logic, philosophy, or administration of science or a discussion of science and public affairs. Readers should be able to learn from a General Article what has been firmly established and what are significant unresolved questions; speculation should be kept to a minimum.

General Articles should include an author note giving names, addresses, and positions of the authors; a summary (50 to 100 words); and brief subheadings to indicate the main ideas. The reference list should not be exhaustive; a maximum of 40 references is suggested.

**Length limit.** Up to 5000 words (approximately five printed pages), including references and notes and figure and table legends. Figures and tables together should occupy no more than one printed page.

### Research Articles

Research Articles are expected to contain new data and to represent substantial contributions in their fields. They should include an author note giving names, addresses, and positions of the authors; an abstract (50 to 100 words); and brief subheadings to delineate the main sections of the text. The text should include a short introductory section outlining the main point of the paper, a description of the experiments and the results, and then a discussion or conclusion. A maximum of 30 references is suggested.

**Length limit.** From 2000 to 4000 words (3 to 3½ printed pages) including references and notes and figure and table legends. Figures and tables together may occupy up to one printed page.

### Reports

Reports are expected to contain solid research results or reliable theoretical calculations. Preference is given to reports that describe discoveries that will be of broad interdisciplinary interest or of unusual interest to the specialist. They should include an abstract (50 to 100 words) and a reference list; complete documentation need not be presented

but should be available in cited references. A maximum of 20 references is suggested.

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Letters are selected for their pertinence to material published in *Science* or because they discuss significant problems of interest to scientists in general. Letters pertaining to material published in *Science* may correct errors, provide support or agreement, offer different points of view, clarify, or add information. Personal remarks about another author are inappropriate. Outside reviewers may be consulted. The selection of letters is intended to reflect the range of opinions received.

When a letter refers to an Article or Report published in *Science*, the original author is usually given an opportunity to reply. Letters are acknowledged by postcard. Authors whose letters are accepted are so notified. Letters must be typed with double-spacing; they are frequently shortened.

**Length limit.** Preference is given to letters that do not exceed 250 words.

### Technical Comments

Technical Comments may criticize Articles or Reports published in *Science* or offer useful additional information. Discussions of minor issues or priority claims are not appropriate, nor are questions that can be resolved by private correspondence. The authors of the original paper are usually asked for an opinion of the Comments and are given an opportunity to reply in the same issue if the Comments are accepted. The Comments, and sometimes the reply, are subjected to the usual review procedures. Technical Comments are published at the end of the Reports section.

**Length limit.** Up to 500 words, including references and notes.

### Book Reviews

The selection of books to be reviewed and of reviewers is made by the editors. Instructions and length specifications accompany the books when they are sent to reviewers.



## Submission of Manuscripts

Submit an original and two duplicates of each manuscript, together with a letter of transmittal giving

- 1) the names and telephone numbers of the authors;
- 2) the title of the paper and a statement of its main point;
- 3) three to eight keywords to be used for indexing;
- 4) the names, addresses, telephone numbers, and fields of interest of four to six persons in North America but outside your institution who are qualified to referee your paper;
- 5) the names of colleagues who have reviewed your paper;
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- 7) a statement that the material has not been published and is not under consideration for publication elsewhere.

Address the manuscript to the Editor, *Science*, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005.

Authors will usually be notified of acceptance, rejection, or need for revision in 6 to 8 weeks (Research Articles and Reports) or 8 to 10 weeks (General Articles).

When a paper is accepted for publication in *Science* it is understood by the editors that any new cell line, virus strain, or monoclonal antibody described or used as a reagent in the experiments reported, or any sample on which the conclusions of the paper depend, will be made available to other bona fide scientists for further experimentation.

It is also understood that a paper accepted by *Science* will not be released to the press or the public prior to its publication. Any exceptions to this embargo should be discussed with the editors in advance.

## Manuscript Preparation

**Typing.** Use double-spacing throughout the text, tables, figure legends, and references and notes. Put your names on each page and number the pages, starting with the title page.

**Titles.** Titles should be short. For General Articles the maximum length is 52 characters including spaces; for Re-

search Articles and Reports the maximum is 108 characters.

**Summary or abstract.** These should convey to the general reader the main point of the paper and outline the results or conclusions.

**Text.** A brief introduction should portray the broad significance of the paper. The whole text should be intelligible to readers in more than one discipline. Technical terms should be defined.

**Units of measure.** Use metric units. If measurements were made in English units, give metric equivalents.

**Symbols and abbreviations.** Define all symbols, abbreviations, and acronyms.

**References and notes.** Number references and notes in the order in which they are cited in the text. Place references cited only in tables or figure legends after the text references. For abbreviations of journal titles see: (i) *Serial Sources for the BIOSIS Database* (BioSciences Information Service, Philadelphia; published annually each January); (ii) *Chemical Abstracts Service Source Index (CASSI)*, 1907–1974 cumulative and its 1975–1979 quarterly supplements (Chemical Abstracts Service, Columbus, Ohio, 1975–1979 and supplements); or (iii) *Publications Indexed for Engineering (PIE)* (Engineering Index, Inc., New York; published annually). For journals not listed in these sources provide full titles. For references with up to five authors provide all the names; for more than five, provide the name of the first author only. Use the following forms:

For journal papers: H. J. Neville and S. Foote, *Neurosci. Res. Bull.* **20**, 242 (1981); J. W. Lewis *et al.*, *Peptides* **4**, 635 (1983).

For a book: G. N. Baturin, *Phosphorites on the Sea Floor* (Elsevier, Amsterdam, 1982), pp. 83–87.

For a paper in a compilation: J. W. Fitzgerald and D. W. Johnson, in *Sulphur 82*, A. I. More, Ed. (British Sulphur Corporation, London, 1982), vol. 1, pp. 411–426.

For unpublished material: A. Giraud, paper presented at the American Nuclear Society Conference, Washington, D.C., November 1976.

**Acknowledgments.** Gather all acknowledgments into a brief statement at the end of the references and notes.

**Figures.** For each figure submit three glossy prints of sufficient size to permit

relabeling, if necessary, but not larger than 216 by 279 millimeters (8½ by 11 inches). Label each on the back with the name of the author and the figure number and indicate the correct orientation. Authors requesting the use of color are usually asked to pay \$600 for the first figure and \$300 for each additional figure. These charges are applied to cover the cost of reprints. Cite all figures in the text and provide a brief legend for each on a separate sheet.

**Tables.** Type each table, with its legend, on a separate sheet. Give each table a number and cite it in the text. Give each column a heading with units of measure indicated in parentheses. Do not change the unit of measure within a column.

**Equations and formulas.** Use quadruple-spacing around equations and formulas that are to be set off from the text. Define all symbols.

## Printing and Publication

**Proofs.** One set of galley proofs is provided for each paper. Alterations should be kept to a minimum. Extensive alterations may delay publication.

**Scheduling.** Papers are scheduled for publication after *Science* has received corrected galley proofs from the authors. The time between acceptance of papers and mailing of galley proofs to authors may be 4 to 8 weeks (allowing for editing and typesetting); the time between receipt of authors' galley proofs by *Science* and publication may be 4 to 6 weeks (allowing for proofreading, layout, and paging). There may be delays for papers with tables or figures that present problems in layout, for papers accompanied by cover pictures, and for papers that exceed the length limits.

**Reprints.** An order blank for reprints accompanies proofs.

## Cover Photographs

Particularly good photographs that pertain to a paper being submitted will be considered for use on the cover. Submit prints (not slides, negatives, or transparencies) with the manuscript and indicate in the letter of transmittal that a possible cover picture is enclosed.

NATIONAL INSTITUTES OF HEALTH  
PUBLIC HEALTH SERVICE  
DEPARTMENT OF HEALTH AND HUMAN SERVICES  
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(All applications must be postmarked before closing date)

## DIRECTOR, NATIONAL INSTITUTE OF ARTHRITIS, DIABETES, AND DIGESTIVE AND KIDNEY DISEASES

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

This is a Civil Service position in the Senior Executive Service (SES), with an authorized salary range from \$58,938 to \$66,000 per annum. Candidates may be eligible for Physicians Comparability Allowance up to \$10,000 per year. Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service.

The mandatory professional qualifications are: (1) meet the minimum educational requirements for Medical Officer, GS-602, or Health Scientist, GS-601 (or equivalent combination of experience and training); and (2) have research experience and knowledge of research programs in one or more areas related to arthritis, diabetes, digestive and kidney diseases and other metabolic disorders. In addition, candidates must meet the following managerial/executive qualifications by demonstrating competence to assume leadership responsibilities in: (1) assuring that key national and agency goals are considered in making program decisions; (2) establishing effective external communications by being a representative spokesperson for the organization, and maintaining working relationships with outside key individuals and groups; (3) developing

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Candidates who meet the mandatory requirements will be further evaluated by the Search Committee on the following factors: communications and interpersonal skills; training and education; honors and awards; scientific reputation/peer recognition; and the degree to which they exceed the minimally qualified level of the managerial/executive qualifications. Information on any of the above requirements may be obtained by calling Mrs. Helen Stafford at (301) 496-4197.

Applications (Personal Qualifications Statement, SF-171) are to be sent to: Mrs. Helen C. Stafford, Executive Secretary, Search Committee for Director, NIADDK, National Institutes of Health, Building 1, Room 19, Bethesda, Maryland 20205. A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

Application forms are subject to the provisions of the Privacy Act and become the property of DHHS. All qualified candidates will receive consideration without regard to race, religion, color, sex, age, national origin, lawful political affiliation, marital status, union membership, or any nondisqualifying physical or mental handicap.

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