

together the diverse research on cell division.

The volume is divided into three sections; the first describing premitotic events; the second, events surrounding chromosome motion; and the last, the processes of cytokinesis. The general quality of the papers is high.

Of the many promising new approaches to the study of mitosis and cytokinesis the study of mutants receives the most attention (with three papers devoted to the subject). A particularly noteworthy paper by Berl R. Oakley describes some beautiful studies done by Oakley and N. R. Morris on tubulin mutants in *Aspergillus*. Oakley and Morris have thus far been able to show that, other than by their mere assembly, microtubules play an essential role in mitosis. The question this study raises (what role do microtubules play in mitosis?) is obvious and fundamental and clearly points the way to future work.

The lysed cell model of mitotic and cytokinetic motion, an important technique largely developed by W. Z. Cande, is presented with clarity by Judith A. Snyder. Microinjection technique is also covered by Snyder. Thus far the technique has helped to clarify the possible role of actin and myosin in mitosis and cytokinesis, but its as yet untested potential to jam the works with antibodies against other putative components of the motile apparatus suggests important contributions yet to come. Again, Snyder's paper should be consulted for information on the application of antibodies in attempts to disrupt motion in the lysed cell system. This important work is deserving of more attention than it receives in the volume. I might also point out that many of the contributors describe the microtubule polarity orientations of the spindle deduced from experiments in which microtubules were grown from cell centers or kinetochores in vitro, but Snyder is the only one who presents the more recent and compelling data (of S. Heidemann, U. Euteneuer, and J. R. McIntosh and of B. Telzer and L. Haimo) in which the orientation of spindle microtubules attached to kinetochores in situ is shown to be the other way around. That is, these microtubules exhibit the same polarity as nonkinetochore microtubules of the same half-spindle.

The use of monoclonal antibodies to demonstrate the distribution of unknown spindle components and to facilitate their extraction is just beginning to be described in print, and it is not mentioned in the book. The molecular genetic analysis of the kinetochore and its

constituent parts has gotten under way with the elegant studies of L. Clark and J. Carbon on the nature of centromeric DNA in yeast. This work, with its obvious implications for genetic engineering as well as for furthering the basic understanding of the role of the centromere in mitosis, is mentioned only twice (in papers by Oakley and by John R. Pringle).

Long-standing techniques that have paid off are well represented in the volume. One favorite of mine is the micro-manipulation of chromosomes to determine the nature of the forces acting on them when they become displaced from the spindle. Gordon W. Ellis and David A. Begg do a real service in succinctly and clearly summarizing the major findings of these efforts, largely work done by Begg and by R. B. Nicklas. Other mechanical or physical manipulations include microbeam irradiation of spindle parts (discussed by Forer) and displacement of the spindle location in the cell in order to alter cytokinesis. This latter work, as described by Gary W. Conrad and Raymond Rappaport, has a long history, but it remains a mystery how the spindle communicates essential spatial and temporal information to the cell cortex to trigger a cytokinetic furrow.

Immunofluorescence studies have yielded a number of important conclusions. The volume contains a highly readable account of this work by J. E. Aubin. Calmodulin is localized to the spindle during mitosis, as are certain protein kinases. It is fair, knowing this, to speculate on the role of these proteins in the mitotic process. Aubin evenhandedly presents the evidence for and against a specific localization of actin in the spindle. However, the reader should again consult Snyder's paper for review of the rather compelling work of Cande that suggests no role for an actomyosin system in chromosomal movement. Work demonstrating a centromere-specific antibody, and tracing the antigen it recognizes through the cell cycle, is important but apparently too recent for mention in the Aubin review, or indeed in the volume. Quite beautiful immunofluorescence results showing the dramatic changes in microtubule distribution in interphase sea urchin embryos are presented by Patricia J. Harris, along with speculation on the role of calcium in producing rapid changes in microtubule distribution in the cell.

Besides the lack of coverage of some major new findings and directions, the one major flaw I find with the volume is that it is laid out with a design unfriendly to neophytes. The book would have been well served by a general introduction and

review. Instead, it thrusts the reader directly into a technical paper on the usage of cell-cycle mutants. I suggest that the reader wishing to become acquainted with the field read the papers by Snyder and by Conrad and Rappaport and then, with the benefit of an up-to-date background, tackle the remainder of the book.

ROBERT L. MARGOLIS

Fred Hutchinson Cancer Research Center, Seattle, Washington 98104

Books Received

Advanced Topics on Radiosensitizers of Hypoxic Cells. Papers from an institute, Cesenatico, Italy, Aug. 1980. A. Breccia, C. Rimondi, and G. E. Adams, Eds. Plenum, New York, 1982. xiv, 284 pp., illus. \$39.50. NATO Advanced Study Institutes Series A, vol. 43.

Advances in Archaeological Method and Theory. Vol. 5. Michael B. Schiffer, Ed. Academic Press, New York, 1982. xiv, 478 pp., illus. \$42.

Advances in Comparative Leukemia Research 1981. Proceedings of a symposium, Los Angeles, Aug. 1981. David S. Yohn and James R. Blakeslee, Eds. Elsevier, New York, 1982. xiv, 650 pp., illus. \$95.

Brain and Intelligence in Vertebrates. E. M. Macphail. Clarendon (Oxford University Press), New York, 1982. x, 424 pp., illus. Cloth, \$29.50; paper, \$14.95.

Calcium and Cellular Secretion. Ronald P. Rubin. Plenum, New York, 1982. xii, 276 pp., illus. \$35.

A Celebration of Medical History. The Fiftieth Anniversary of the Johns Hopkins Institute of the History of Medicine and the Welch Medical Library. Lloyd G. Stevenson, Ed. Johns Hopkins University Press, Baltimore, 1982. viii, 228 pp., illus. Cloth. The Henry E. Sigerist Supplements to the *Bulletin of the History of Medicine*, New Series, No. 6.

Drugs and Behavior. Fred Leavitt. Wiley-Interscience, New York, ed. 2, 1982. x, 516 pp., illus. \$39.95. Wiley Series on Personality Processes.

The Eastern Bering Sea Shelf. Oceanography and Resources. Donald W. Hood and John A. Calder, Eds. National Oceanic and Atmospheric Administration, Washington, D.C., 1982 (distributor, University of Washington Press, Seattle). Two volumes. xxviii, 1340 pp., illus. Each volume, \$65.

Ecology of Desert Organisms. Gideon Louw and Mary Seely. Longman, New York, 1982. vi, 194 pp., illus. Paper, \$17.50.

Food-Climate Interactions. Proceedings of a workshop, Berlin, Dec. 1980. Wilfrid Bach, Jürgen Pankrath, Stephen H. Schneider, Eds. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xxxii, 504 pp., illus. Cloth, \$58.50; paper, \$28.50.

Food Drying. Proceedings of a workshop, Edmonton, Canada, July 1981. Gordon Yaciuk, Ed. International Development Research Centre, Ottawa, Canada, 1982 (U.S. distributor, Unipub, New York). 104 pp., illus. Paper, \$8. IDRC-195e.

The Form of Time. Elliott Jaques. Crane Russak, New York, and Heinemann, London, 1982. xvi, 238 pp. \$24.50.

Freud as a Writer. Patrick Mahony. International Universities Press, New York, 1982. xvi, 228 pp. \$18.50.

Groping in the Dark. The First Decade of Global Modelling. Donella Meadows, John Richardson, and Gerhart Bruckmann. Wiley, New York, 1982. xxviii, 312 pp., illus. Paper, \$26.95.

Group Decision Making. Papers from a symposium. Hermann Brandstätter, James H. Davis, and Gisela Stocker-Kreichgauer, Eds. Published in cooperation with European Association of Experimental Social Psychology by Academic Press, New York, 1982. xvi, 558 pp., illus. \$45.

Handbook of Composites. George Lubin, Ed. Van Nostrand Reinhold, New York, 1982. xii, 786 pp., illus. \$69.50.

Handbook of Enzyme Inhibitors (1965-1977). Mahendra Kumar Jain. Wiley-Interscience, New York, 1982. xiv, 448 pp. \$100.

Introductory Statistics for the Behavioral Sciences. Joan Welkowitz, Robert B. Ewen, and Jacob Cohen. Academic Press, New York, ed. 3, 1982. xiv, 370 pp., illus. \$19.75.

Iron Deficiency. Brain Biochemistry and Behavior. (Continued on page 465)

BOOKS RECEIVED

(Continued from page 441)

ior. Papers from a conference. Ernesto Pollitt and Rudolph L. Leibel, Eds. Raven, New York, 1982. xvi, 214 pp., illus. \$26.

Keynes's Impact on Monetary Economics. J. C. Gilbert. Butterworth, Boston, 1982. viii, 280 pp. \$39.95.

Laboratory and Field Manual of Ecology. Richard Brewer and Margaret T. McCann. Saunders, Philadelphia, 1982. x, 270 pp., illus. Paper.

Laboratory Manual for Anatomy and Physiology with Cat Dissections. Patricia J. Donnelly and George A. Wistreich. Harper and Row, New York, 1982. xviii, 636 pp., illus. Spiral bound, \$17.50.

A Laboratory Manual for General Botany. Margaret Balbach and Lawrence C. Bliss. Saunders, Philadelphia, ed. 6, 1982. viii, 350 pp., illus. Paper.

Megakaryocyte Biology and Precursors. In Vitro Cloning and Cellular Properties. Proceedings of a symposium, Atlanta, May 1980. Bruce Lee Evatt, Richard F. Levine, and Neil T. Williams, Eds. Elsevier/North-Holland, New York, 1981. xx, 350 pp., illus. \$70.

The Monkey Business. A Scientist Looks at Creationism. Niles Eldredge. Washington Square Press (Pocket Books), New York, 1982. 158 pp. Paper, \$2.95.

Motility of the Digestive Tract. Proceedings of a symposium, Koenigstein, Germany, Sept. 1981. Martin Weinbeck, Ed. Raven, New York, 1982. xxiv, 614 pp., illus. \$68.50.

Mucus in Health and Disease—II. Proceedings of a symposium, Manchester, England, Sept. 1981. Eric N. Chantler, James B. Elder, and Max Elstein, Eds. Plenum, New York, 1982. xvi, 442 pp., illus. \$49.50. Advances in Experimental Medicine and Biology, vol. 144.

Le Mystère Humain. John C. Eccles. Translated from the English edition (1979) by Anne-Marie Graulich and Marc Richelle. Mardaga, Brussels, 1982. 304 pp., illus. Paper, 790 BF. Psychologie et Sciences Humaines, 106.

The Neck of the Giraffe. Where Darwin Went Wrong. Francis Hitching. Ticknor and Fields, New Haven, Conn., 1982. 288 pp., illus. \$13.95.

The Neglected Facts of Science. Dewey B. Larson. North Pacific Publishers, Portland, Ore., 1982. x, 132 pp. \$9.

Networking. The First Report and Directory. Jessica Lipnack and Jeffrey Stamps. Dolphin (Double-day), Garden City, N.Y., 1982. xvi, 398 pp. Paper, \$15.95.

Neuroimmunology. Jeremy Brockes, Ed. Plenum, New York, 1982. xvi, 256 pp., illus. \$29.50. Current Topics in Neurobiology.

Neuro-Ophthalmology. A Series of Critical Surveys of the International Literature. Vol. 2. S. Lessell and J. T. W. van Dalen, Eds. Excerpta Medica, Amsterdam, 1982 (U.S. distributor, Elsevier North-Holland, New York). xii, 404 pp., illus. \$88.25.

The Psychosomatic Approach to Illness. Robert L. Gallon, Ed. Elsevier, New York, 1982. xviii, 308 pp. \$40.

Psychotherapy Research. Methodological and Efficacy Issues. APA Commission on Psychotherapies. American Psychiatric Association, Washington, D.C., 1982. xvi, 262 pp. Paper, \$15.

Quantum Processes in Semiconductors. B. K. Ridley. Clarendon (Oxford University Press), New York, 1982. x, 286 pp., illus. \$55.

Reduction in the Abstract Sciences. Daniel A. Bonevac. Hackett, Indianapolis, 1982. vi, 178 pp. \$18.50.

Stereotactic and Functional Neurosurgery. Proceedings of a meeting, Zurich, July 1981. Ph. L. Gildenberg, J. Siegfried, J. Gybels, and Patricia O. Franklin, Eds. Karger, Basel, 1982. x, 554 pp., illus. Paper, \$93. Advances in Stereotaxial Neurology, vol. 9. Reprinted from *Applied Neurophysiology*, vol. 45.

The Structure of Freudian Thought. The Problem of Immutability and Discontinuity in Developmental Theory. Melvin Feffer. International Universities Press, New York, 1982. x, 298 pp. \$17.50.

The Study of Biology. Jeffrey J. W. Baker and Garland E. Allen. Addison-Wesley, Reading, Mass., ed. 4, 1982. xvi, 972 pp., illus., + appendixes. \$26.95.

Sudden Coronary Death. Papers from a conference, May 1981. Henry M. Greenberg and Edward M. Dwyer, Jr., Eds. New York Academy of Sciences, New York, 1982. viii, 484 pp., illus. Cloth or paper, \$100. Annals of the New York Academy of Sciences, vol. 382.

Surface Enhanced Raman Scattering. Richard K. Chang and Thomas E. Furtak, Eds., Plenum, New York, 1982. viii, 424 pp., illus. \$49.50.

X-Ray Symposium 1981. Hamilton, N.Y., Apr. 1981. A. G. Davis Philip, Ed. L. Davis Press, Schenectady, N.Y., 1981. vi, 76 pp., illus. Paper. *ASNY News Letter*, vol. 1, No. 9.

Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations. 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.

CLASSIFIED ADVERTISING DEADLINES:
20 August issue (mailed 13 August): 30 July
27 August issue (mailed 20 August): 6 August
3 September issue (mailed 27 August): 13 August
10 September issue (mailed 3 September): 20 August

POSITIONS WANTED: 40¢ per word, plus \$4 for use of box number, per insertion. \$10 minimum, per insertion. Prepayment required. This rate is available only to individuals seeking jobs.

DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth): \$9 per millimeter; \$225 minimum, per insertion (minimum charge covers 25 millimeters on a single column; 25 millimeters equals 10 lines of 50 spaces per line). No charge for use of box number. No agency commission for ads less than 103 millimeters (4 inches). No cash discount. Prepayment required for all foreign ads. Purchase orders and billing information required for all other advertising.

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

SCIENCE, Room 207
1515 Massachusetts Avenue, NW
Washington, D.C. 20005
Telephone: 202-467-4456

Send copy for **Display** ads 1/6 page and larger to:

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

Blind ad replies should be addressed as follows:

Box (give number)
SCIENCE
1515 Massachusetts Avenue, NW
Washington, D.C. 20005

POSITIONS WANTED

Biochemist, Ph.D., enzymatic thiol: protein disulfide exchange reactions; enzyme purification, enzymology, immunology, hepatocyte culture. Teaching experience, publications. Seeks position in northwestern Vermont. Teaching, research, or science writing in academia or industry. Box 204, SCIENCE. X

Biochemist/Tissue Culturist: M.S. 1972, 10 years of research experience in electrophoresis, column chromatography, tissue culture, serum proteins, serum-free media, hormones, growth factors. Several publications; seeking position in industry or academic/research institution in New Jersey area. Box 182, SCIENCE. X

Biology B.S. seeks a starting position as a laboratory technician or research assistant. Willing to relocate or work any shift. Box 203, SCIENCE. X

Cell Sorting/Analysis. Ph.D. Pioneer in field with proven ability to develop new concepts, seeks position giving opportunity to pursue innovative applications of technology to medicine. Prefers academic position with solid funding. Box 196, SCIENCE. 7/30; 8/6, 13

Chemist, Ph.D. physical chemistry 1970. Research experience in biochemistry of enzymes and structural proteins. Skilled in instrumental analysis. Writes well; publications and obtained grants. Good learner; interests not limited. Pleasant personality. Will relocate. Seeks research/government/industrial position. Box 201, SCIENCE. X

Environmental Scientist—Researcher/Educator. M.S., biology. Research experience: limnology, agroecosystems, forestry, vertebrate behavior. Teaching experience: ecology, biology, general science. Seeks challenging position providing professional growth opportunities. Box 202, SCIENCE. 7/30; 8/6

POSITIONS WANTED

Molecular Biochemist. Ph.D., strong multidisciplinary research experiences; oligo- and polynucleotide synthesis; DNA enzymology and sequencing; cloning and expression of genes; colony hybridization; radioimmunoassays; 25 publications. Seeking challenging research, management, or teaching position. Box 205, SCIENCE. X

Physician, completed Second Disease Postulate extension of Koch's 1880 technology which eliminates animal experimentation in diagnoses and cures for HLA linked immune diseases. **Consultant** position sought for translating new technology. Dr. R. Kalchbrenner, 804 Harrison Street, Oak Park, Illinois 60304. X

Toxicologist/Pharmacologist, Ph.D. Research and teaching experience, publications, in vivo and in vitro drug metabolism, reproductive toxicology-teratology. Management and supervisory experience. Seeks research/administrative position in pharmaceutical/chemical or contract research organization. Box 200, SCIENCE. 7/30; 8/6, 13

POSITIONS OPEN

ANATOMY ASSISTANT PROFESSOR—The Department of Anatomy, The Medical College of Pennsylvania, has a tenure-track position at the assistant professor level beginning 1 July 1983. Applicants should be qualified to teach gross anatomy and embryology. Candidates should have postdoctoral research experience and a significant record of research accomplishment with the capacity to function as an independent researcher in the field of cellular or developmental neurobiology. Current research areas in the department include neurobiology, muscle biology, and cell biology. Salary is dependent upon qualifications and experience. Applicants are invited to submit curriculum vitae, names of three references, and a statement of research interests and teaching experience by 1 December 1982 to: **Dr. Leonard L. Ross, Chairman, Department of Anatomy, MEDICAL COLLEGE OF PENNSYLVANIA, 3300 Henry Avenue, Philadelphia, Pa. 19129. An Equal Opportunity Employer.**

ASSISTANT PROFESSOR. Applications are invited for a position at the level of assistant professor (tenure-track) in the Department of Chemistry at Stanford University in the general area of organic chemistry. Applicants must be strongly motivated toward research and have a commitment to teaching undergraduates as well as graduates. In applying, send curriculum vitae, list of publications, and a brief statement of research interests (three pages or less), and, in addition, have three letters of recommendation sent to: **Professor John I. Brauman, Chairman, Department of Chemistry, Stanford University, Stanford, California 94305. Stanford is committed to Equal Opportunity through Affirmative Action in employment, and we are especially eager to identify minority persons and women with appropriate qualifications.** The deadline for receipt of applications is 15 October 1982.

The Departments of Biochemistry and Pharmacology invite applications from qualified persons for a joint tenure-track appointment at the level of **ASSISTANT PROFESSOR.** The individual is expected to develop a strong and creative research program in the application of basic techniques of recombinant DNA to problems in eukaryotic molecular biology. Teaching some aspect of biochemistry and/or pharmacology also will be required. Please send curriculum vitae, bibliography, and three letters of reference to: **Dr. Michael J. Peach, Department of Pharmacology, Box 448, University of Virginia School of Medicine, Charlottesville, Virginia 22908. University of Virginia is an Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION, ORGANIC CHEMISTRY. Applications are invited for a tenured senior appointment in the Department of Chemistry at Stanford University. Applicants must have outstanding research credentials in the general area of organic chemistry and a strong commitment to teaching undergraduates as well as graduates. In applying, send curriculum vitae and bibliography to: **Professor J. I. Brauman, Department of Chemistry, Stanford University, Stanford, California 94305. Stanford is committed to Equal Opportunity through Affirmative Action in employment and we are especially eager to identify women and minority persons with appropriate qualifications.** Applications should be received by 15 October 1982.

POSITIONS OPEN

ACADEMIC POSITION IN ERGONOMICS AND WORK PHYSIOLOGY

The Southern Occupational Health Center, University of California, Irvine, is seeking candidates for a non-tenure-track position in work physiology and ergonomics. Responsibilities will include direction of a work physiology laboratory, in association with programs in toxicology, industrial hygiene, and occupational medicine, and limited instruction of graduate students and medical residents. Evidence of productivity as a principal investigator with significant contributions to the scientific literature, ability to obtain extramural research support, and research in an area relevant to occupational health are required. Teaching experience at the graduate level is highly desirable.

Qualifications include an M.D. or earned graduate doctoral degree in a discipline pertinent to ergonomics. Salary and rank commensurate with experience and qualifications.

Please send curriculum vitae and names of three referees to:

James L. Whittenberger, M.D.
Director, Southern Occupational Health Center
19722 MacArthur Boulevard
University of California, Irvine
Irvine, Calif. 92717

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

CHAIRMAN, DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS. The University of Washington invites nominations and applications for the chairmanship of Physiology and Biophysics. Selection criteria include a nationally recognized research program, concern for excellence in teaching, and demonstrated administrative skills. Applications, including curriculum vitae and names of three references, should be sent by 1 October 1982 to: **Dr. Cornelius Rosse, Chairman, Physiology and Biophysics Search Committee, Department of Biological Structure SM-20, University of Washington, Seattle, Wash. 98195.**

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

UNIVERSITY OF KENTUCKY DEPARTMENT OF VETERINARY SCIENCE

Assistant or Associate Professor—Virology

Postdoctoral Fellowship—Virology

Postdoctoral Fellowship—Pharmacology

Faculty Position:

Applications are being accepted from persons with graduate training, postdoctoral experience, and records of accomplishment in research on viral diseases of domestic animals. Applicants with a D.V.M. and Ph.D. degree are preferred. The successful applicant will have a strong interest in research designed to define etiology, epidemiology, pathogenesis, and immune responses to viral infections of large animals. Salary for this regular academic series position is negotiable.

Postdoctoral Positions:

1) **Virology:** Applications are solicited from individuals with a Ph.D. degree in virology. Opportunity to join a research program involved in studies of molecular characterization of equine herpesvirus and molecular epidemiological studies of equine herpesviral disease. Appointment is for 1 year, renewable at an annual stipend of \$16,800.

2) **Pharmacology:** Applicants must possess a Ph.D. degree in pharmacology and are offered an opportunity for a 1-year renewable appointment with a group involved in studies of pharmacokinetics and behavioral effects of drugs on performance of horses. The stipend offered for this position is \$16,800 per year.

Send curriculum vitae, a résumé of research experience, and a statement of research interests to:

Dr. John T. Bryans
Chairman
Department of Veterinary Science
University of Kentucky
Lexington, Ky. 40546-0076

The University of Kentucky is an Equal Opportunity Employer.

POSITIONS OPEN

The University of Texas Health Science Center at San Antonio, Texas, Department of Obstetrics and Gynecology, invites applications for an **ASSISTANT PROFESSOR**, Ph.D. in endocrinology or related discipline. Requires strong background in biochemistry of reproduction and molecular biology with relevant experience in independent research and teaching. Training and experience in hormone-receptor interaction, radioimmunoassay, and purification of peptide hormones is necessary. Salary range of \$30,000 to \$40,000. Interested persons should send a letter of application, curriculum vitae, and names of three references (who will not be contacted without permission) by 23 August 1982 to: **Carl J. Pauerstein, M.D., Professor and Chairman, Department of Obstetrics and Gynecology, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, Texas 78284.**

An Equal Opportunity/Affirmative Action Employer

READVERTISED ASSISTANT PROFESSOR OF MICROBIOLOGY

The West Virginia School of Osteopathic Medicine (WVSOM) has an opening for a tenure-track position as assistant professor of microbiology starting no later than 1 January 1983. Responsibilities include teaching immunology and parasitology to medical students. Review of applications will begin 15 August and continue until the position is filled. (The development of a research program is encouraged.) Submit curriculum vitae, transcripts, and three letters of recommendation to: **Elizabeth Blatt, Ph.D., Associate Dean for Basic Sciences, West Virginia School of Osteopathic Medicine, 400 North Lee Street, Lewisburg, West Virginia 24901.**

WVSOM is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT OR ASSOCIATE PROFESSOR, TENURE-TRACK, PHYSIOLOGY. Ph.D. Applications are invited to fulfill departmental obligations for undergraduate courses in physiology. Starting date is August 1983. Candidates at the associate professor level should have teaching experience. Postdoctoral research experience is required for applicants at the assistant professor level. Candidates should be qualified to contribute to graduate courses in cellular or comparative physiology. Persons with active research programs in cellular neurophysiology, cellular endocrinology, or membrane biology have high priority. Submit résumé, statement of research interests, and the names and addresses of three referees by 31 December 1982 to: **Dr. Duncan W. Martin, Chairman, Department of Zoology, SE 632, University of Arkansas, Fayetteville, Ark. 72701.**

Affirmative Action/Equal Opportunity Employer.

CELLULAR NEUROPHYSIOLOGIST. The Department of Animal Physiology at the University of California, Davis, invites applications for a tenure-track, 11-month faculty position. Minimum qualifications include a Ph.D. in an area providing training in cellular neurophysiology and a demonstrated ability to conduct high-quality, independent, original research in any area of cellular neurophysiology. The successful applicant will be expected to contribute to the department's teaching and advising program in vertebrate physiology for undergraduate and graduate students. The appointment will be at the rank of assistant professor, the level depending on background and experience. Applicants should submit curriculum vitae, bibliography, recent reprints, transcripts (if Ph.D. conferred within last 5 years), and the names of at least three references to: **Chair, Cellular Neurophysiologist Search Committee, Department of Animal Physiology, University of California, Davis, Calif. 95616.** Closing date for receipt of applications is 1 October 1982.

The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.

CHAIRMAN, DEPARTMENT OF RADIOLOGY

Henry Ford Hospital, a 1000-bed hospital and group practice affiliated with the University of Michigan, is seeking a chairman for the Department of Radiology. Attractions include full-time staff of 371 M.D.'s with 32 in radiology, large OPD and inpatient practice, four busy ambulatory satellites, third- and fourth-year medical clerkships, high-quality house staff program, large institutional research effort, and new radiological facilities and equipment ready in late fall 1982. Interested candidates are invited to send complete curriculum vitae to: **Thomas Killip, M.D., Chairman Search Committee, Henry Ford Hospital, 2799 West Grand Boulevard, Detroit, Michigan 48202.**

POSITIONS OPEN

NATIONAL SCIENCE FOUNDATION DIVISION OF MATERIALS RESEARCH

The National Science Foundation is seeking applicants for the position of **ASSISTANT/ASSOCIATE PROGRAM DIRECTOR**, Solid State Physics Program, Condensed Matter Sciences Section, Division of Materials Research. The position is excepted from the competitive civil service and is equivalent to the GS-13/14 level (\$33,586 to \$51,596). This position will be filled on a rotational basis. Applicants should have a Ph.D. or equivalent experience and training in an appropriate field, plus 6 years of successful scientific research experience. A broad general knowledge of the field and some administrative experience are also required. This position will remain open until filled. Those interested should send current résumés to: **Division of Personnel Management, National Science Foundation, 1800 G Street, NW, attention: Personnel Management Branch, Washington, D.C. 20550.** For further information, call: **E. Paul Broglio, telephone: 202-357-7840.** *The National Science Foundation is an Equal Opportunity Employer.*

NATIONAL SCIENCE FOUNDATION DIVISION OF MATERIALS RESEARCH

The Division of Materials Research at the National Science Foundation (NSF) is recruiting an Intergovernmental Personnel Act Assignee for a **1- or 2-year assignment in the Condensed Matter Sciences Section.** Applicants should have a minimum of 10 years of research experience in condensed matter physics beyond the Ph.D. Experience in research on low temperature physics, phase transitions, and critical phenomena is desirable. The successful applicant is expected to provide scientific expertise which would complement the present staff and would serve as consultant to the Condensed Matter Sciences Section. Interested applicants should submit curriculum vitae to: **Dr. Lewis H. Nosanow, Acting Division Director, Division of Materials Research, Room 408, National Science Foundation, Washington, D.C. 20550.** For further information, call: **Dr. Nosanow, telephone: 202-357-9794.** *NSF is an Equal Opportunity Employer.* This position will remain open until filled.

NATIONAL SCIENCE FOUNDATION

National Science Foundation (NSF), Division of Industrial Science and Technological Innovation, has an opening for a **POLICY ANALYST** on a 1- to 2-year rotational appointment at the GS-13/14 level (equivalent to the GS-13/14), \$33,586 to \$51,596 per annum based on qualifications and experience. The successful candidate will join a multidisciplinary research section assessing issues relating to innovation processes, and their national science and technology implications. Candidates should have a wide range of field research experience related to innovation processes, within a particular emphasis on small firm innovation. Candidates should hold a Ph.D. in economics or another relevant field but equivalent experience may be substituted. At least 3 years of experience beyond the Ph.D. or equivalent is required. Applications will be accepted until the position is filled. To apply, send résumé or SF-171, Personal Qualifications Statement, to: **National Science Foundation, Division of Personnel and Management, Personnel Administration Branch, 1800 G Street, NW, Washington, D.C. 20550, attention: E. Paul Broglio, EX 82-38.** For further information, telephone: **202-357-7841.** *NSF is an Equal Opportunity Employer.*

NATIONAL SCIENCE FOUNDATION

The National Science Foundation, Division of Atmospheric Sciences, is seeking qualified candidates for a 2-year rotational appointment as **PROGRAM DIRECTOR FOR CLIMATE DYNAMICS.** The position is excepted from the competitive civil service and is equivalent to GS-1301-14/EP-15, \$39,689 to \$60,689 (limited by statute to \$57,500) per annum. Responsibilities include directing program activities, evaluating proposals, preparing recommendations for grants, and monitoring the progress of funded projects. Candidates should have a Ph.D. or its equivalent in geophysical sciences, meteorology, or climate related activities plus 6 to 8 years of research and administration experience. Send résumé to: **National Science Foundation, Personnel Administration Branch, Room 212, 1800 G Street, NW, Washington, D.C. 20550, attention: E. Paul Broglio, EX 82-15.** by 15 August 1982. For further information, telephone: **202-357-7841.** *NSF is an Equal Opportunity Employer.*

**FACULTY OPENING
IN OBSTETRICS AND
GYNECOLOGY
GYNECOLOGIC
ONCOLOGY**

Rank: Assistant Professor
Combined Salary: \$65,000
(approx.)

Qualifications: M.D. with eligibility for certification by American Board of Obstetrics and Gynecology and certification (or eligibility for) in subspecialty of Gynecologic Oncology. Interest and experience in undergraduate and graduate medical student teaching, clinical and basic research, and clinical practice of gynecologic oncology necessary.

For further information, contact:

Leo D. Lagasse, M.D.
Chief
Division of Gynecologic Oncology
Department of Ob-Gyn
UCLA School of Medicine
Los Angeles, CA 90024

(UCLA is an Affirmative Action/Equal Opportunity Employer)

Cell Biologist / Biochemist

Merck Sharp & Dohme Research Laboratories, a world leader in the development of pharmaceutical and biological products, is currently seeking a cell biologist with biochemistry training to join our Department of Inflammation, located in Rahway, New Jersey.

We are seeking an individual with an M.S. or B.S. degree with research experience and a strong background in cell biology and biochemistry.

The responsibility of this challenging position includes studying the mechanisms that underlie chemotaxis in leukocytes using both genetic and biochemical approaches.

Salary, benefits and career growth potential are excellent. Send resume to Ms. J. Y. Zeltner, Ref. SM,



MERCK & CO., INC.

P.O. Box 2000, Rahway, N.J. 07065

An equal opportunity employer, m/f

Senior Biological Scientist

The Biosciences Division, Unilever Research Colworth Laboratory, has a senior opportunity for a biological scientist. The requirements are for a scientist of international repute with experience in running a large group in some area of biological research, viz animal cell biology, biophysics, biochemistry, etc. The age range is likely to be 35-45.

The Colworth Laboratory has a staff of 1300, and is one of the three major laboratories of the international Research Division of Unilever.

The Biosciences Division of the Colworth Laboratory has a strategic role in developing appropriate areas of biosciences and the understanding of biological materials. The Division is headed by Dr AT James CBE, and possesses active research groups in plant cell biology and tissue culture, animal cell molecular biology, modern skin biology, protein and polysaccharide conformation, as well as support facilities in NMR, CD, ORD, electron microscopy of all types, image analysis, low angle X-ray, and in a wide range of analytical chemistry.

Dr DA Rees FRS of this Division is to become Director of the National Institute for Medical Research and this has led to the need for a new appointment at Colworth.

Expressions of interest are requested in the first instance to be addressed to:

Dr AT James CBE
Unilever Research
Colworth Laboratory
Sharnbrook
Bedford MK44 1LQ



PRESIDENT ST. LOUIS COLLEGE OF PHARMACY

The Board of Trustees of the St. Louis College of Pharmacy invites nominations and applications for the position of president to succeed Charles C. Rabe who has served the College with distinction for 21 years and who has announced his retirement effective July 1, 1983.

The College is a private, freestanding, undergraduate, non-sectarian institution with an enrollment of approximately 650 students in a five-year course of study culminating in the Bachelor of Science in Pharmacy degree. The College has received full accreditation from the American Council on Pharmaceutical Education and from the North Central Association of Colleges and Schools. The faculty is composed of 31 full-time and 14 part-time members. The campus consists of four buildings on six acres of land in the renowned Westend Medical Complex one block from beautiful 1,300 acre Forest Park.

The president is responsible for the administration of the College and reports to the Board of Trustees.

Candidates should have an understanding and appreciation of the operation of an educational institution. This may include prior employment in an academic capacity or direct involvement with an academic institution as a member of its governing board and service on its committees. Although desirable, it is not essential that the candidate have a degree in pharmacy.

The Presidential Search Committee will begin the review of candidate credentials on November 1, 1982. Candidates should submit a vita to: Dr. Frank L. Mercer, Secretary, Presidential Search Committee, 3709 Viking Avenue, St. Louis, Missouri 63125.

An Equal Opportunity Employer

FILMS IN THE SCIENCES

Reviews and Recommendations
Compiled and edited by
Michele M. Newman and
Madelyn A. McRae

This indispensable reference reviews nearly 1000 films from all areas of science. It provides detailed summaries, evaluations, and complete ordering information for films appropriate to students, teachers, professionals, and general audiences. The reviews are grouped by Dewey decimal category. Subject-title and film distributor indexes also make them easy to use. A must for the librarian, the science teacher, or the curious browser.

182 pages 1980
Cloth: ISBN 87168-304-7 \$14.00

American Association for the
Advancement of Science, Box
FL6, 1515 Massachusetts
Avenue, N.W., Washington, D.C.
20005

Director, Cardiovascular Pharmacology Ph.D. and/or M.D.

Our prominent Pharmaceuticals Division has an exceptional career opportunity managing a multi-disciplinary pre-clinical research program focused on the discovery and development of new drugs for treating diseases of the cardiovascular system. Candidates must possess a strong background in Cardiovascular Pharmacology and a demonstrated record of scientific productivity.

Working in our highly-sophisticated Cardiovascular Pharmacology sub-division, presently consisting of a staff of thirty-five professionals, the Director will coordinate and direct all phases of the program and collaborate with other sub-divisions within the Biology Research Division. Program management experience plus the ability to organize and perform high-quality work within budget and time limitations IS ESSENTIAL. Industrial experience preferred though not required.

The successful individual will receive a good salary, together with a comprehensive employee benefits program, and work in a highly-progressive company providing one of the finest scientific environments to be found.

Interested, qualified professionals are requested to send detailed Curriculum Vitae including salary history and requirements, in strict confidence, to: Mr. C. R. Grupe, Employment Manager, The Pharmaceuticals Division of CIBA-GEIGY Corporation, 556 Morris Avenue, Summit, New Jersey 07901. An equal opportunity employer m/f.

CIBA—GEIGY

POSITIONS OPEN

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE ST. LOUIS, MISSOURI DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS CHAIRPERSON

Applications and nominations are invited for the position of chairperson of the Department of Physiology and Biophysics. Candidates should be distinguished as scholars and scientists with demonstrated commitment to medical and graduate education.

Curriculum vitae and bibliography may be submitted to:

M. M. King, M.D.

Dean

Washington University School of Medicine
660 South Euclid Avenue
St. Louis, Missouri 63110

An Equal Opportunity/Affirmative Action Employer

CHAIR, DEPARTMENT OF ANATOMY UNIVERSITY OF CALIFORNIA, IRVINE

The California College of Medicine of the University of California at Irvine invites applications and nominations for the chairmanship of the Department of Anatomy. The chair must be capable of exerting strong intellectual leadership in a department with a strong research emphasis in neuroscience. Demonstrated scholarly eminence and capabilities in administration, planning, and teaching are required. Applications and nominations should be submitted by 1 September 1982 to: Professor Larry Stein, Chair of the Anatomy Search Committee, Department of Pharmacology, California College of Medicine, University of California, Irvine, Calif. 92717. The University of California is an Equal Opportunity/Affirmative Action Employer.

CHAIRPERSON, PHYSIOLOGY AND PHARMACOLOGY. The successful candidate is expected to recruit high-quality faculty and graduate students and to maintain a vigorous research program. The applicant should have a Ph.D. in pharmacology or physiology or an M.D. with acknowledged experience and competence in these fields. The applicant should have a strong record of academic achievement as indicated by scientific contributions, success in obtaining extramural funding, scholarly publications, and peer recognition. Experience in teaching medical and graduate students is required. Administrative experience preferred. Closing date: 31 August 1982. Salary commensurate with training and experience. Interested individuals should submit a letter of application, curriculum vitae, and at least three letters of recommendation to: Paul Smith, Ph.D., Chairman, Physiology and Pharmacology Search Committee, 237 Lee Medical Building, The University of South Dakota School of Medicine, Vermillion, South Dakota 57069. Affirmative Action/Equal Opportunity Employer.

CHEMISTRY. Immediate opening for a research associate in the field of radiopharmaceuticals. Requires Ph.D. in chemistry, with 1 to 2 years of postdoctoral experience in the synthesis of physiologically active compounds. Operational knowledge of multinuclear spectrometer and HPLC required. Send résumé with professional references to: Professor G. W. Kabalka, Department of Chemistry, University of Tennessee, Knoxville, Tenn. 37996-1600. University of Tennessee is an Equal Opportunity Employer.

DIRECTOR OF METHODS DEVELOPMENT FOR THE AMERICAN OIL CHEMISTS' SOCIETY (AOCS)

Duties: Interpreting, organizing, and coordinating a program to revise and maintain the AOCS Official and Tentative Methods; formulating a plan to collect, evaluate, and publish relevant methodology; maintaining liaison with related technical and industrial groups; and facilitating the efforts of technical committees involved in methods development. Reports to the executive director and Uniform Methods Committee.

Desired qualifications: Self-starter; experience in analytical chemistry, including fats, oils, and their derivations; experience in methods development; excellent oral and written communication skills; and ability to work with volunteers.

Send résumé and salary history to:

Search Committee
c/o Executive Director
508 South Sixth Street
Champaign, Ill. 61820

SECTION HEAD ATHEROSCLEROSIS RESEARCH



The Pharmaceutical Research Section of SANDOZ, INC., a leading pharmaceutical company with a worldwide reputation for notable research, seeks a Scientific Investigator in the area of atherosclerosis research. As Section Head, you will be responsible for leading an established group of 20 scientists in research on atherosclerosis, with emphasis on lipoprotein metabolism. The goal of this group is the design of therapeutic agents useful in the prevention or treatment of atherosclerosis. Candidates should possess a Ph.D. in Biochemistry or related field with emphasis in lipoprotein metabolism.

Located in northern New Jersey, SANDOZ offers an attractive combination of salary, benefits, desirable working atmosphere and favorable prospects for professional growth.

Please send resume, including salary information, in confidence to:

Ms. Judith O'Hagan Personnel Manager,

Sandoz, Inc., Research and Development
Route 10, East Hanover, N.J. 07936
An equal opportunity employer M/F

THE UNIVERSITY OF CALGARY Research Positions in Immunology

The Immunological Sciences Research Group at The University of Calgary is recruiting three individuals with expertise in complementology, regulation of cellular immune response or immunochemistry. Applicants must be capable of productive independent research and will be eligible for nomination for funding from the Alberta Heritage Foundation for Medical Research, a newly established foundation for the support of medical research in the Province of Alberta. Candidates for appointment at the Assistant Professor level are preferred but more senior individuals will be considered. Remuneration will be based upon salary scales at The University of Calgary. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Deadline for receipt of applications is September 1, 1982. Interested candidates please send a curriculum vitae, a brief description of field of interest and three names of reference to:

Dr. David S. Matheson, Chairman
Immunological Sciences Research Group
Faculty of Medicine
The University of Calgary
3330 Hospital Drive N.W.
Calgary, Canada T2N 4N1

HOFFMANN-LA ROCHE PHARMACOLOGY 3 Senior Scientists

Hoffmann-La Roche, one of the world's leaders in the pharmaceutical industry, has three career opportunities in Pharmacology: two on the Atherosclerosis team and one in the Bronchopulmonary area.

Successful candidates will supervise scientific personnel, present research at internal and external meetings, and collaborate with peers in other therapeutic areas. Individuals who have the qualifications listed below are invited to apply.

ATHEROSCLEROSIS

Candidates with proficiency in cell culture techniques to conduct basic and applied research on endothelial and smooth muscle cells. Ph.D. in biochemistry, pharmacology or cell biology required. Basic knowledge of lipid metabolism essential. **Position E-731.**

Candidates with proficiency in conducting basic and applied research in animal models of atherosclerosis and in the evaluation of the pathology

associated with this disease. Ph.D. in pathology or biochemical pathology required. **Position E-738.**

BRONCHOPULMONARY

Experience with the assay of calcium and cyclic nucleotide regulated enzymes. This position will involve the development and implementation of in vitro enzyme screening methods for modulators of the calcium/calmodulin regulated processes involved in cell secretory and smooth muscle contractile processes. Ph.D. in biochemistry or pharmacology. **Position E-732.**

Roche offers an outstanding compensation package, including an attractive bonus, and an environment that encourages professional growth.

Only responses including present salary will be acknowledged. Please send resume indicating the position for which you are applying to Eleanor M. Malone, Employment Department,



An Equal Opportunity Employer

**HOFFMANN-
LA ROCHE INC.**
Nutley, NJ 07110

*Products that matter
from people who care*

POSITIONS OPEN

CHEMIST, ORGANIC (research associate in organic chemistry) Ph.D., requires 1 year of postdoctoral experience in natural products synthesis. Stereochemical analysis of heteroatom-assisted selenation reactions and their application to synthesis of natural products and biologically active molecules; use specialized small-scale equipment, IR, UV, NMR, and mass spectroscopy, and so forth; \$12,500 per year. Contact: **Troy Job Service Office, attention: George Dick, 1801 Sixth Avenue, Troy, N.Y. 12180**; refer to: job offer number 4808370, D.O.T. code 022.061-010.

DNA BIOCHEMIST

Applicants are invited for a research faculty position at assistant/associate professor level in the Department of Neurology of the University of Vermont College of Medicine. Applicants should have 2 to 5 years of experience in DNA biochemistry, with particular emphasis on DNA damage and repair mechanisms. The successful applicant will develop a team studying DNA damage in neuronal degenerations and aging of the nervous system. Joint appointments may be available. Candidates should be accomplished researchers, who have demonstrated writing and grant funding ability. Curriculum vitae, selected reprints, and names of three referees to:

Walter G. Bradley, D.M., F.R.C.P.
Department of Neurology
University Health Center
One South Prospect Street
Burlington, Vermont 05401

ELECTRON MICROSCOPIST

An outstanding scientist is sought to conduct vigorous research and teach in areas of cell biology to graduate and medical students. The facility occupies a five-room suite in the Basic Sciences Center. Rank at assistant or associate professor, depending upon credentials. Joint appointment will be arranged with appropriate basic or clinical science department, depending on applicant's research interests. Submit résumé and the names of five references by 1 December 1982 to: **Dr. Charles W. Johnson, Vice President for Academic Affairs, Meharry Medical College, Nashville, Tennessee 37208.**

JEFFERSON MEDICAL COLLEGE of THOMAS JEFFERSON UNIVERSITY

Tenure-track faculty positions in virology and genetics.

Available immediately for individuals with research interests in virology or microbial/molecular genetics. Candidates must have a doctoral degree and at least 2 years of postdoctoral experience. Rank and salary to be determined by qualifications. Duties will include teaching medical and graduate students as well as carrying on an active research program. Send curriculum vitae, a brief statement of research interests, and names of three references to:

Dr. R. W. Schaedler
Department of Microbiology
JEFFERSON MEDICAL COLLEGE
1020 Locust Street
Philadelphia, Pa. 19107
Equal Opportunity Employer

MOLECULAR BIOLOGISTS

Applications are invited for two faculty positions at the assistant or associate professor levels for individuals who will establish vigorous independent research programs in the areas of: (i) **developmental biology**, and (ii) **sickle cell research**. Preferred research interests for position (i) should include molecular biology of eukaryotes using recombinant DNA technology. The anticipated starting date is 1 December 1982, or as soon as suitable candidates are located. Applicants should have a Ph.D. or M.D. degree and postdoctoral training or faculty experience. Successful applicants will be expected to maintain a research program of high quality as well as to teach in the graduate and medical biochemistry programs. Applications, including curriculum vitae, representative publications, a concise statement of research interests and/or proposed research, and the names of three references, should be sent to: **Dr. Ifeanyi J. Arinze, Department of Biochemistry, School of Medicine, Meharry Medical College, Nashville, Tenn. 37208.**

POSITIONS OPEN



The University of Illinois is seeking candidates and/or nominations for the position of Dean of its College of Medicine. The Dean is responsible for the administration of all phases of a college headquartered in Chicago with programs in three other State locations. The college admits approximately 331 medical students per year; its operating costs are more than \$60 million per year.

Qualified candidates for this position must possess an M.D. or Ph.D. degree in a health related science. They must have demonstrated ability in medical education and administration. Interested individuals should submit their curriculum vita to:

William N. Spellacy, M.D., Chair
Search Committee for the Medical Deanship
University of Illinois at Chicago
P.O. Box 6998
Chicago, Illinois 60680

All applications postmarked before October 1, 1982 will be considered. Starting date and salary are negotiable.

THE UNIVERSITY OF ILLINOIS IS AN AFFIRMATIVE ACTION/
EQUAL OPPORTUNITY EMPLOYER

EXECUTIVE DIRECTOR FOR THE GERONTOLOGICAL SOCIETY OF AMERICA (GSA), the national, multidisciplinary organization of researchers, educators, and practitioners in aging, with more than 5000 professional members.

Responsibilities include sound management, implementation of policies and procedures, and expert support of membership and committees.

Candidates should be experienced in managing a professional society or similar organization, including publication of journals, managing a large annual scientific meeting, and program and fiscal development. Résumés should be sent by 18 August 1982 to: **Dr. John Rowe, Chair, Search Committee, GSA, 1835 K Street, NW, Suite 305, Washington, D.C. 20006.**

Salary and benefits negotiable. *Equal Opportunity Employer.* Principals only.

FACULTY POSITION IN INFECTIOUS DISEASES—HOSPITAL EPIDEMIOLOGY

Full-time assistant/associate professor in the Division of Infectious Diseases, Department of Medicine, to function as hospital epidemiologist and direct infection control activities. Assist in planning infection control aspects of new cancer hospital, bone marrow transplantation unit, and related protocols. Participates in division clinical, teaching, and research activities. Available immediately. American Board of Internal Medicine and certified or eligible in subspecialty of infectious diseases. Training and experience in hospital infection control preferred. Applications should include curriculum vitae, bibliography, appropriate references, and brief statement of research interests, and should be addressed to: **Robert L. Perkins, M.D., Director, Division of Infectious Diseases, The Ohio State University, N-1148 University Hospital, 410 West 10 Avenue, Columbus, Ohio 43210.**

An Equal Opportunity/Affirmative Action Employer

FACULTY POSITION IN PHARMACOLOGY

Applications are invited for a faculty position at the assistant professor level in the areas of pharmacology and toxicology. The Ph.D. degree in pharmacology is required. Duties include teaching undergraduate courses in pharmacology and/or toxicology and a commitment to participation in Continuing Education Programs. Starting date is flexible, but no later than 1 January 1983. Interested persons should send a résumé and the names and address of three references to:

Abraham J. Haddad, Ph.D.
Dean of the Hampden Campus
Massachusetts College of Pharmacy
and Allied Health Sciences
24 Bellamy Road
Springfield, Mass. 01119
Telephone: 413-783-1846

The College is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

University of Michigan Medical School, Department of Radiology, has, on occasion, open **FACULTY POSITIONS** within the department and at its affiliated hospitals. Physicians filling these positions will take part in the programs of patient care, teaching, and research of the Departments of Radiology. They will supervise the activities of house officers and aid in the teaching of house officers and medical students. Qualified applicants must be American Board of Radiology-certified or Board-eligible. Previous training or work experience in an academic institution as well as demonstration of previous academic research and teaching experience are desirable. Academic rank will depend on qualifications and experience.

Interested applicants should contact: **William Martel, M.D., Acting Chairman, Department of Radiology, University of Michigan Medical School, Ann Arbor, Michigan 48109.** A nondiscriminatory, Affirmative Action Employer.

GENETICS FACULTY

Applications and nominations are invited for a tenure-track faculty position at the level of **ASSISTANT or ASSOCIATE PROFESSOR** in the general area of **plant molecular-developmental genetics**. Applicants must have a strong background in molecular biology and genetics and demonstrated research capability involving the regulation of gene expression at the molecular level. Persons with experience in gene cloning, sequencing, transformation, and related rDNA technologies will be preferred. The department has a strong and very active nucleus of investigators in molecular genetics. Applicants are expected to have postdoctoral experience and significant publications in the area. The successful candidate will be expected to develop an independent, vigorous, and competitive research program which would complement existing research efforts in the department, and will be responsible for teaching developmental genetics at the graduate level. Applications must be received by 15 September 1982. Send curriculum vitae, reprints of refereed publications, three references, and a summary of research and teaching experience to:

Dr. John G. Scandalios, Head
Department of Genetics
North Carolina State University
P.O. Box 5487
Raleigh, N.C. 27650

North Carolina State University is an Affirmative Action/Equal Opportunity Employer.

Challenging opportunity in oncology practice and clinical research for Board-certified/eligible **INTERNIST-ONCOLOGIST**. The opportunity features a research-based multispecialty group clinical practice in an oncology center. For those interested in the challenge of such an opportunity, submit your inquiries and résumé to: **Chief of Medicine, Morton Cancer and Research Hospital, P.O. Box 35988, Dallas, Texas 75235.**

Challenging opportunity in clinical practice and clinical research for **INTERNIST**. Board-certified/eligible in infectious diseases. The opportunity features a research-based multispecialty group clinical practice in an oncology center. For those interested in the challenge of such an opportunity, submit your inquiries and résumé to: **Chief of Medicine, Morton Cancer and Research Hospital, P.O. Box 35988, Dallas, Texas 75235.**

Ph.D. NEUROPHYSIOLOGIST to coordinate and supervise clinical neurophysiology laboratory (EEG, EP, EMG, NC studies). Possibilities for clinical research available. Please send résumés to: **Dr. V. Bosch, Department of Neurology, University of Medicine and Dentistry of New Jersey, 100 Bergen Street, Newark, N.J. 07103.** An *Equal Opportunity/Affirmative Action Employer, M/F.*

The University of Michigan Medical School, Department of Pathology, Clinical Pathology Program, is seeking a Board-certified or -eligible **M.D. PATHOLOGIST**, at the instructor/assistant professor level. With experience in the fields of hematopathology and blood banking. Duties will include teaching of medical school students and resident staff and an opportunity for basic and applied research. Faculty rank and salary will be commensurate with experience and qualifications. Please direct inquiries to:

Peter A. Ward, M.D., Professor and Chairman, Department of Pathology, University of Michigan Medical School, M5240 Medical Science I, 1335 East Catherine Street, Ann Arbor, Mich. 48109. A nondiscriminatory, Affirmative Action Employer. Code 38.

CARDIOVASCULAR PHARMACOLOGISTS

Our expanding cardiotonic program offers an excellent opportunity for a Pharmacologist with a minimum of 2 years related experience. The candidate should have a PhD or equivalent and experience in cardiotonics and vasodilators.

The successful applicant will be given appropriate facilities and technical staff to actively participate in drug development research within our well established cardiovascular program.

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

Please send your Curriculum Vitae including salary requirements in confidence to:

Mr. John G. Barry,
Employment Administrator



**STERLING-WINTHROP
RESEARCH INSTITUTE**

A Division of Sterling Drug, Inc.
Columbia Turnpike, Rensselaer, NY 12144

Equal Opportunity Employer M/F/H

FUNGAL GENETICS, INC. VICE PRESIDENT AND DIRECTOR OF RESEARCH and STAFF SCIENTIST IN MOLECULAR BIOLOGY

Fungal Genetics, Inc., a newly formed company in the field of filamentous fungi, is seeking scientists to fill two positions: Director of Research and staff scientist.

1) *Research Director of Molecular Genetics.* The successful candidate will direct a research program relating to the genetic engineering of industrially important fungi. Applicants with experience in fungal genetics and recombinant DNA technology are encouraged to apply. A background in the expression of recombinant molecules in prokaryotes and eukaryotes as well as fungal fermentation technology and protein chemistry is desirable.

2) *Staff Scientist.* A staff scientist (PhD level) is sought with experience in recombinant DNA techniques. A background in yeast genetics or *Neurospora* genetics is desirable but not essential. The position offers a unique opportunity for advancement in a growing corporation which will exploit its proprietary position in filamentous fungi.

Applications from both the academic and industrial sectors are invited.

Fungal Genetics, Inc. is located in Seattle, Washington, a community with an excellent mix of cultural, recreational, and educational opportunities with attractive residential areas and mild climate year-round.

Highly competitive salaries are offered including excellent fringe benefits and substantial equity participation. Please send your Curriculum Vitae including salary requirement in confidence to:

Fungal Genetics, Inc.
14721 Cottonwood Place
Bothell, Washington 98011

ATT: Dr. Alan Lambowitz, Chairman
Scientific Advisory Board

Challenging Opportunities Within Molecular Genetics (High Wycombe-UK)

G.D. Searle has established a worldwide reputation for its innovative research in new areas of therapy, and its involvement in biotechnology continues to expand. At our modern research site in Buckinghamshire, England, the Molecular Genetics Department has a number of highly qualified scientists who are involved in various new areas of research and have experience in a wide range of techniques.

GROUP LEADER

We are seeking a dynamic person who has completed post-doctoral training with several years experience in recombinant DNA technology to lead a group which is currently completing a successful project reporting to the Director of Molecular Genetics. This person will lead a group involved in a new research project and will enjoy a broad interaction with other groups and departments. (Ref:MG3).

RESEARCH INVESTIGATOR— YEAST GENETICS

We require a Ph.D with experience in Molecular Genetics who will help develop our expertise in a new group studying gene expression in yeast. Although experience with yeast would be desirable it is not a necessary requirement. (Ref:MG23).

RESEARCH INVESTIGATOR— EUKARYOTIC EXPRESSION

We are also looking for a Ph.D with experience in Molecular Genetics who will be required to initiate new developments in the field of eukaryotic expression. This group works with several other teams concerned with expression in bacteria and yeast. (Ref:MG19).

The above positions carry competitive salaries, liberal vacation allowances, contributory pension fund, private medical scheme, and other employee benefits.

Candidates should send a detailed C.V. to Miss D. Wardman, Assistant Personnel Officer, Searle Research & Development, Lane End Road, High Wycombe, Bucks. England, quoting the appropriate reference. (Tel: High Wycombe, 21124, ext 3374), or write with full details to Barbara Gardner, Research & Development Division, G.D. Searle & Co., P.O. Box 5110, Chicago, IL 60680.

Equal Opportunity M/F/H . . . A Practice, Not Just A Policy

SEARLE

POSITIONS OPEN

HEMATOPATHOLOGIST. The Department of Pathology is seeking an experienced Board-certified pathologist for a position at a junior to intermediate faculty level with responsibilities to assist in Clinical Laboratories hematology services and educational programs. Proven teaching ability and research accomplishments are necessary. Particular expertise in coagulation is desired. Send curriculum vitae and names of four references to: **George S. Smith, M.D., Director, Clinical Laboratories, University of California, Los Angeles (UCLA) Center for Health Sciences, Los Angeles, Calif. 90024.** *UCLA is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are encouraged to apply.*

University of Leicester, Department of Genetics, appointment of **TEMPORARY LECTURER.** Applications are invited for the post of temporary lecturer in the Department of Genetics for a period of 3 years with the prospect of an extension for a further 2 years. The department is seeking to appoint someone with at least 2 years of postdoctoral experience and a research interest in molecular aspects of gene structure or gene control in animals would be preferred. The person appointed will be expected to contribute mainly to the teaching of medical students, and an interest in human genetics and some familiarity with quantitative and population genetics would therefore be important assets. Appointment to commence on 1 October 1982 or such later date as may be agreed. Salary dependent upon qualifications and experience on the scale £6070 to £12,860 (under review). Further particulars from: **The Registrar, University of Leicester, University Road, Leicester, LE1 7RH, England,** to whom applications on the form provided should be returned no later than 31 August 1982.

MANAGER/BREEDER—CORN

Asgrow Seed Company, a subsidiary of The Upjohn Company, is seeking an experienced corn breeder/manager as a part of an integrated program for short maturity hybrids (for northern United States, Europe, and Canada). Growth opportunity, involving heavy input in establishment of a new Minnesota research site, plus management of Asgrow's current and anticipated research personnel and resources targeting at the northern corn markets. Some travel required, including trips to Canada and Europe. Solid company support for research plus personal/professional development.

This position requires a successful track record in corn breeding, with qualifications equivalent to a Ph.D. plus 5 years of experience. Some supervisory-management experience desirable. Asgrow offers comprehensive, highly competitive compensation and benefits programs. Send résumé to: **Dennis Nevala, THE UPJOHN COMPANY, 7000 Portage Road, Kalamazoo, Michigan 49001 (9504-190-18).**

An Equal Opportunity Employer, M/F

MOLECULAR BIOLOGISTS

Immunex Corporation, a biotechnology company in the area of immunoregulation by lymphokines, seeks molecular biologists at both the staff scientist and research technician levels.

Staff Scientist: Ph.D. and postdoctoral experience in some area of recombinant DNA technology: gene cloning, expression of cloned genes in higher eukaryotes, or synthetic deoxyoligonucleotide synthesis. Knowledge of immunology is not necessary.

Research Technician: B.S. or M.S. and experience in recombinant DNA technology.

Immunex offers an opportunity for multidisciplinary, interactive research projects in well-equipped research laboratories. To apply, send a résumé of research experience, including the names of three references, to:

**Personnel Director
IMMUNEX CORPORATION
51 University Building
Seattle, Wash. 98101**

Ph.D. MOLECULAR BIOLOGIST—YEAST. A small, young company specializing in agricultural and industrial applications of recombinant DNA technology seeks an additional senior scientist to join the yeast group. Extensive experience in recombinant DNA technology is necessary; yeast genetics is helpful but not essential. Starting date is approximately 1 January 1983. Please send letter of application, curriculum vitae, and three references by 15 August 1982 to: **Personnel Director, BioTechnica International, Inc., 85 Bolton Street, Cambridge, Mass. 02140.**

POSITIONS OPEN

Ph.D. IN MOLECULAR OR CELLULAR BIOLOGY available immediately for candidate with a demonstrated interest and technological expertise in developmental and molecular biology. Experience in hematopoietic stem cell growth in vitro desirable. Excellent research opportunity in the area of the regulation of hemoglobin synthesis in man and baboon. Salary competitive and dependent on qualifications. Candidate must have qualifications for an academic appointment at the University of Illinois. Career possibilities. Send curriculum vitae and names of three references to: **Dr. Joseph DeSimone, Hematology Research Laboratory, VA West Side Medical Center, 820 South Damen Avenue, Chicago, Ill. 60612.** *An Affirmative Action/Equal Opportunity Employer.*

PHARMACOLOGY—UNIVERSITY OF PENNSYLVANIA. The Department of Pharmacology has openings for up to four new faculty members. Emphasis will be on recruitment at the rank of assistant professor, but a limited number of tenured positions are also available. Applicants must have an advanced degree and at least 2 years of postdoctoral research experience. Preference will be given to individuals with backgrounds in molecular or cellular pharmacology, but applications from outstanding candidates in any area relevant to pharmacology will be welcome. Renovated laboratory space and reasonable start-up funds are available. *Applications from female and minority persons are especially encouraged.* Inquiries, which should include curriculum vitae, list of publications, reprints or preprints of selected papers, and a brief statement on career goals, should be addressed to: **Dr. Perry B. Molinoff, Chairman, Department of Pharmacology, University of Pennsylvania School of Medicine, Philadelphia, Pa. 19104.** *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

POPULATION ECOLOGIST (FISHERIES)

Academic position (assistant research biologist, University of California) available starting summer or fall 1982 for a Ph.D. experienced in working with the population dynamics of nearshore marine fishes. The successful candidate will assist the principal investigator of a multidisciplinary research program assessing environmental impacts of a southern California power plant on the local fish fauna. Applicants must have: (i) experience in solving problems related to the size, growth, yield, and mortality of fish stocks, (ii) demonstrated ability in scientific writing, and (iii) some practical experience in environmental consulting. Salary to depend on experience. Send résumé, including a brief description of experience in applied research and the names of three references, to: **Dr. E. DeMartini, 533 Stevens Avenue E-55, Solana Beach, California 92075,** before 20 August 1982. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

TWO POSTDOCTORAL POSITIONS available beginning 1 October 1982 in the Developmental Biology Center, University of California, Irvine. Recent Ph.D. required, preferably in the areas of cell biology, molecular biology, developmental biology, neurobiology, or genetics. The first position is for research in the laboratories of H. R. Bode (control of growth and differentiation in *Hydra*), R. Campbell (cell behavior and morphogenesis), J. L. Marsh (molecular genetics of *Drosophila* development using molecular cloning and hybridomas), or R. Meyer (developmental neurobiology). NIH regulations require that candidates for this position be citizens or permanent residents of the United States. The second position is specifically designated for a person interested in initiating a research program on mammalian limb development under the supervision of P. Bryant and S. Bryant. *The University of California is an Equal Opportunity/Affirmative Action Employer.* Submit résumé and brief description of research interests and experience, together with the names of three individuals willing to write on your behalf, to: **Peter J. Bryant, Developmental Biology Center, University of California, Irvine, Calif. 92717,** by 1 September 1982.

POSTDOCTORAL POSITION ANTICANCER DRUGS AND CHROMATIN

Postdoctoral position available for studies of the relationship between DNA damage and repair and chromatin alterations as they relate to antitumor mechanism. Applicant may be an M.D. or Ph.D. Send curriculum vitae, including three references and personal letter, to: **Dr. Warren Ross, Department of Pharmacology, Box J267, J. H. Miller Health Center, Gainesville, Florida 32610.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS available 1 September 1982 for recent Ph.D.'s in microbiology, immunology, or biochemistry. Areas of research include trace metal metabolism in *Streptococcus mutans* (R. Byers), molecular genetics of viral DNA (M. Rhoades), and fish lymphocyte subpopulations and functional heterogeneity of IgM antibodies (L. W. Clem). Send résumés and names of three references to: **Dr. L. W. Clem, Department of Microbiology, University of Mississippi Medical Center, Jackson, Miss. 39216.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION available in October 1982 to work on physical and chemical damage to DNA and initiation of its repair by human cells and tissues. The work involves analysis of damaged DNA moieties, enzyme purification, and DNA sequencing techniques. Send curriculum vitae and references to: **Dr. Nahum J. Duker, Department of Pathology, TEMPLE UNIVERSITY SCHOOL OF MEDICINE, 3400 North Broad Street, Philadelphia, Pa. 19140.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available for biochemist or cell biologist to study trans-plasma membrane communication as mediated by conformational change and/or clustering of proteins using immunological and protein chemical techniques. Starting salary: \$14,000 to \$17,000. Send résumé and three letters of reference to: **Dr. Bruce S. Jacobson, Department of Biochemistry, University of Massachusetts, Amherst, Mass. 01003.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION. Biologic, immunologic, and biochemical studies on the role of endogenous viral genes in differentiation, autoimmunity, and cancer. Emphasis on mouse xenotropic type C viruses. Research on embryonal carcinoma cells also conducted. Experience in nucleic acid technology desirable. Send curriculum vitae to: **Dr. Jay A. Levy, Cancer Research Institute, M 1282, University of California School of Medicine, San Francisco, Calif. 94143.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION dealing with membrane receptor studies available. Studies involve identification and isolation of plasma membrane receptor(s) for *Clostridium perfringens* enterotoxin. Training in membrane biochemistry or molecular biology desirable. Send curriculum vitae and three letters of recommendation to: **Dr. Bruce A. McClane, 720 Scaife Hall, Department of Microbiology, School of Medicine, University of Pittsburgh, Pittsburgh, Pa. 15261.**

An Equal Opportunity Employer

POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS. Expanding Department of Medical Microbiology is seeking candidates for multiple postdoctoral research associate positions in funded research programs. Applicants with outstanding potential in areas of microbial pathogenesis, immunology, molecular biology, membranes, siderophores, bacterial genetics, and toxins are invited to send curriculum vitae, statement of current research interests and goals, recent reprints, and three letters of recommendation to the individual responsible investigator(s): **Richard A. Finkelstein, Ph.D.,** professor and chairman (pathogenesis and immunology of enterotoxigenic enteropathogens; iron and bacterial-host interactions); **Charlotte D. Parker, Ph.D.,** associate professor (*Bordetella pertussis* genetics, physiology, and immunology); or **Kim S. Wise, Ph.D.,** assistant professor (immunology, membrane biochemistry, and molecular cloning of mycoplasma surface antigens; structural/functional dissection of cytoskeletal and ribonucleoprotein complexes with monoclonal autoantibodies), at: **Department of Microbiology, University of Missouri Medical School, Columbia, Mo. 65212.** *An Equal Opportunity/Affirmative Action Employer.*

VIROLOGIST. An expanding microbiology department is seeking applicants for a tenure-track position in the area of molecular and pathogenic virology. Applicants must have Ph.D. and appropriate postdoctoral training. Development of an outstanding research program will be expected. Send curriculum vitae and statement of interests, and have three letters of recommendation indicative of potential for excellence sent to: **Chairman, Search Committee, Department of Microbiology, University of Missouri-Columbia, School of Medicine, Columbia, Mo. 65212.** Deadline: 30 November 1982. *An Affirmative Action/Equal Opportunity Employer.*

RESEARCH DIRECTOR

As part of its continuing philosophy of providing excellence in health care, St. Mary's Hospital and Medical Center has established the Western Heart Institute to advance the knowledge of cardiovascular medicine and provide quality care of the cardiac patient.

A Research Director is sought who will develop independent and collaborative clinical research programs and cardiovascular research, as well as evaluate the effectiveness of, and provide quality assurance for, the total program.

We seek a professional with an M.D. and/or Ph.D. degree with 2 or more years' of related research experience who has been published within the literature of the field. Familiarity with computer applications and clinical environments is helpful.

St. Mary's offers an ideal setting to continue your professional growth, including a competitive salary and benefits package. Qualified candidates are invited to forward a resume and reprints of published research to: Western Heart Institute, c/o Harry Miller, Assistant Administrator, St. Mary's Hospital and Medical Center, 450 Stanyan Street, San Francisco, California 94117. We are an equal opportunity employer.

WESTERN HEART INSTITUTE



RESEARCH ASSOCIATE

To provide social science analysis for a special project in the Technology Adaptation Program of the Massachusetts Institute of Technology. The project deals with policy and resource development in the petroleum industry. This individual will examine energy-economy interactions in developing countries, focusing on the role of petroleum in determining volume and pricing within such an economy. In addition will perform analysis of macro-economic adjustments in developing nations due to changes in investment strategies and structural transformation.

An advanced degree in Economics is called for, along with extensive experience in developing and implementing social and sectoral analysis projects in developing countries, preferably those of the Middle East. Familiarity with academic, governmental and business situations in the Middle East also essential, as well as a strong history of interaction with foreign counterparts at high levels. Knowledge of manpower and energy issues, plus sectoral analysis in energy, transportation and construction sectors also important.

Please submit 2 copies of resume or curriculum vitae to: Ms. Patricia Williams, MIT Personnel Office, E19-239, 77 Massachusetts Ave., Cambridge, MA 02139. MIT is an equal opportunity/affirmative action employer.

MIT

DPZ

DEUTSCHES PRIMATENZENTRUM GMBH
Goßlerstraße 19, 3400 Göttingen
Telefon 05 51/47880

The German Primate Center is performing biologically and medically oriented research on and with nonhuman primates. Also, it will keep and breed primates for other research institutions. The DPZ is in its construction phase now, it will be completed in 1983.

The position of a

Scientific Assistant

will be opened in the Section of Pathology, Bacteriology and Parasitology. The position offers the benefits of the German public services, the annual salary will be in the range of DM 50.000,—to DM 65.000,—depending on the qualification of the applicant.

The assistant's duties will be the diagnostic and scientific aspects of parasitology, and also the participation in other activities of the section.

Applications should be sent to

Deutsches Primatenzentrum GmbH
Goßlerstraße 19
3400 Göttingen
West Germany

AAAS Memberships and Subscriptions

• Whenever you write us about your membership or subscription, please attach a Science address label to ensure prompt service.

• **Mail to:** Membership and Subscription Records, AAAS, 1515 Massachusetts Ave., NW, Washington, D.C. 20005.

☐ **Change of Address:** Please provide 6 weeks' notice. Paste an address label from a recent issue in the space provided. Print new address below.

☐ **Query:** If you have a question, place your address label here and attach this form to your letter.

• **To join or subscribe:** Mail this form with your payment, mark the appropriate boxes, and print your name and address in the space below. (For renewals, attach label.)

☐ **Membership rates** (individual only)
☐ \$48 USA ☐ \$72 Canada ☐ \$75 Foreign
☐ \$103 air-surface delivery via Holland

☐ **Subscriber rates**
☐ \$85 USA ☐ \$109 Canada ☐ \$112 Foreign
☐ \$140 air-surface delivery via Holland

☐ Payment enclosed ☐ Bill me later

Name Please print

Address

City State Zip **MX07**

**ATTACH
LABEL
HERE**

POSITIONS OPEN

POSTDOCTORAL FELLOW

Postdoctoral position available in September 1982 to study the connections of the primate hippocampal formation. Applicants experienced in mammalian neuroanatomy and histological techniques are preferred.

Send curriculum vitae, names of three references, and a summary of recent research activities to: **Dr. W. M. Cowan,**

THE SALK INSTITUTE
P.O. Box 85800
San Diego, Calif. 92138

Equal Opportunity Employer, M/F/H

POSTDOCTORAL POSITIONS. Two positions are available for a multidisciplinary project on two flaviviruses which are important problems in human public health. The project will utilize DNA cloning and monoclonal antibody technologies to clone, identify, and sequence genes for the major envelope proteins of the viruses. Other objectives will be to obtain efficient bioproduction of the viral proteins in recombinant microorganisms, to identify the antigenic domains of these proteins, and to study their biosynthesis in infected cells. Support available 1 September 1982. Send résumé and three letters of reference to: **Dr. Maurille J. Fournier or Dr. Thomas L. Mason, Department of Biochemistry, University of Massachusetts, Amherst, Mass. 01003.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCHERS. The Department of Physiology, University of California, Irvine, is developing a postdoctoral candidate pool for possible openings during the 1982-1983 fiscal year. Openings may be available in the following research areas: ion channels in lipid bilayers, physical chemistry of membranes, mechanisms and regulation of steroid hormone biosynthesis, exercise physiology; in situ electrophoresis of membrane proteins; molecular properties of ion channels in excitable cell membranes. Salary is in accordance with current NIH, NSF postdoctoral stipends which are based upon qualifications and years of prior, relevant postdoctoral experience. *Minorities and women are encouraged to apply.* Send curriculum vitae and names of three references to: **Professor Stephen H. White, Chairman, Department of Physiology, University of California, Irvine, California 92717.**

RESEARCH ASSOCIATES

U.S. Department of Agriculture (USDA) Human Nutrition Research Center on Aging at Tufts University, is seeking three postdoctoral research associates to characterize and study: human apolipoproteins, metabolism of novel preparations of cultured arterial smooth muscle cells, and vitamin K-dependent, gamma-carboxyglutamic acid-containing proteins of blood and bone. Background in protein isolation and purification, two-dimensional gel electrophoresis, immunology, ELISA, cell culture of monoclonal antibody production, protein chemistry, or immunochemistry.

Curriculum vitae and bibliography should be submitted to:

Thomas D. Sykes
Human Nutrition
Research Center
80 Boylston Street
Boston, Mass. 02116

Tufts University is an Equal Opportunity/Affirmative Action Employer.

RESEARCH COORDINATOR

Medical school located in pleasant rural surroundings invites applications from persons with an earned doctorate degree in a biomedical science, who have demonstrated experience in research, publication, and grant acquisition. The individual chosen will administer the office of research, with the following duties: to develop and support faculty research interests, to develop external funding sources, and to administer the animal facility. Salary is negotiable, depending on experience. Curriculum vitae and three letters of recommendation should be sent by 31 August 1982 to: **Elizabeth Blatt, Associate Dean for Basic Sciences, West Virginia School of Osteopathic Medicine (WVSOM), 400 North Lee Street, Lewisburg, West Virginia 24901.**

WVSOM is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

RESEARCH ASSOCIATE, available 1 September. Involves the use of ion microscopy to study elemental distributions in biological tissues. Minimum requirements are a Ph.D. in biological sciences or a related field with 2 years of experience with tissue sectioning techniques and the use of the CAMECA IMS-3f ion microscope in biological studies. Salary range is \$14,500 to \$16,000, depending upon qualifications. *Cornell is an Equal Opportunity/Affirmative Action Employer.* Please apply to: **Professor G. H. Morrison, Department of Chemistry, Cornell University, Ithaca, N.Y. 14853.**

RESEARCH ASSOCIATE to study effects of hormones on the growth and remodeling of bone using organ cultures and primary cultures of bone cells. Qualifications: Ph.D. in an appropriate area of cell biology or molecular endocrinology and up to 3 years of postdoctoral experience. Salary range: \$18,000 to \$23,000; available immediately. Send curriculum vitae and names of three references to: **Dr. James Hamilton, Calcium Research Laboratory, VA Medical Center, 4801 Linwood Boulevard, Kansas City, Mo. 64129.** *Equal Opportunity Employer.*

RESEARCH ASSOCIATE POSITION IN CELL BIOLOGY AND LIPID BIOCHEMISTRY

Research associate to play major role in the research of a small group; develop analytic and preparative methods for important membrane lipids, perform cell culture experiments related to these lipids, and interact with other group members in studies of natural and artificial membranes.

Minimum requirement:

Ph.D. in chemistry-biochemistry. Ideal candidates would have a strong professional commitment to a career in science and a good background in membrane biology.

Salary commensurate with experience, but in range of \$22,000 to \$30,000. Apply to:

Dr. John Glomset
Howard Hughes Medical Institute Laboratory
University of Washington, SJ-50
Seattle, Wash. 98195
Telephone: 206-543-2014

RESEARCH POSITION available immediately for Ph.D. in cerebrovascular research laboratory. Excellent opportunity to join expanding, privately funded research facility with the Department of Neurosurgery at the Pennsylvania Hospital and residency training program at the University of Pennsylvania. Background in stroke and stroke management, cerebral blood flow techniques, and animal surgery desired. Please send curriculum vitae, including salary history and/or requirement, to: **Fredrick Simeone, M.D., Chairman, Department of Neurosurgery, Pennsylvania Hospital, 8th and Spruce Streets, Philadelphia, Pa. 19107.** *Equal Opportunity Employer.*

TECHNICAL ASSOCIATE

Sought for a position in the Biology Department at the Massachusetts Institute of Technology (MIT). Will perform all electron microscopy duties for a research group and its principal investigator. Candidates must have an advanced degree or 5 years of experience in the following techniques: all conventional TEM techniques (fixation, staining, embedding, thin sectioning, negative and preferential staining, and microscopy), some SEM techniques (CPD, sputter coating), and basic photographic techniques. Experience in TEM autoradiography, enzyme histochemistry, TEM of whole mounts, and sectioning parallel and perpendicular to substrates also essential.

Please submit two copies of résumé, referencing job number R815, to: **Vera J. Ballard, MIT Personnel Office, E19-238, 77 Massachusetts Avenue, Cambridge, Mass. 02139.** *MIT is an Equal Opportunity/Affirmative Action Employer.*

TECHNICIAN

Staff research associate. Ph.D. in organic chemistry and year of postdoctoral experience with emphasis on short-lived radionuclides (F-18, N-13, O-15, and C-11) required. Duties include development of radiopharmaceuticals labeled with cyclotron produced positron emitters for research and medical practice. Send résumé to: **Laboratory Personnel Officer, JB, Laboratory of Biomedical and Environmental Sciences, 900 Veteran Avenue, Los Angeles, Calif. 90024.** *An Equal Opportunity Employer, M/F/H.*

POSITIONS OPEN

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW—Position available 1 August 1982 for physiologist or biochemist to participate in research studies involving role of prostaglandins and catecholamines in gastrointestinal (biliary) physiology and endocrine response to shock and trauma. Independent research also encouraged. Ph.D. and experience with HPLC techniques essential. Familiarity with spectrophotometric, fluorescent enzyme assay, radioenzymatic, and RIA desirable. Salary: \$17,000, plus fringe benefits. Send curriculum vitae and names of three references to: **Dr. Tracy K. McIntosh, Department of Surgery, L-910, Boston University Medical Center, 80 East Concord Street, Boston, Mass. 02118.** *An Equal Opportunity Employer, M/F.*

RESEARCH POSITION for postdoctoral or research associate in developmental immunobiology. Applicant should have a Ph.D. or M.D. degree and some experience in radioimmunoassay and hybridoma technology. Interest in T cell differentiation and thymic hormones is essential. Send curriculum vitae and three letters of recommendation to: **Dr. Genevieve S. Incefy, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, N.Y. 10021.**

SYMPOSIUM

ORPHAN DRUG SYMPOSIUM. The University of Michigan will host a symposium titled: "Orphan Drugs and Orphan Diseases: Public Policy and Clinical Realities" in Ann Arbor, Michigan, 27 to 29 September. Speakers will include members of the Food and Drug Administration, drug industry, legislators, and researchers. For informational brochure, contact: **Dr. George Brewer, Department of Human Genetics, University of Michigan, Ann Arbor, Mich. 48109; telephone: 313-764-5499.**

FELLOWSHIPS

IMPERIAL CANCER RESEARCH FUND RESEARCH FELLOWSHIP

Applications are invited for a 3-year postdoctoral appointment to clone mammalian DNA sequences specifying control regions, structural genes and transforming genes, and to test the expression and biological activity of the cloned sequences by the use of DNA transfection techniques and eukaryotic vectors systems.

Salary range: £7700 to £9750, plus London Weighting of £1087, with entry according to qualifications and length of postdoctoral experience.

For further information, contact: **Dr. M. Fried (telephone: 01 242 0200, extension 297).** Applications, supported by full typescript curriculum vitae, including date Ph.D. obtained, list of publications, and the names and addresses of two referees, should be sent to: **The Secretary, Imperial Cancer Research Fund, Lincoln's Inn Fields, London W.C.2, England,** quoting reference 91/82.

FELLOWSHIP: M.D., D.V.M. pathologist. Research and applied training in environmental and occupational toxicology and pathology. Special emphasis areas: cancer biology, cardiopulmonary and neuromuscular disease. Evidence of commitment to academic research career important. National Research Service Award; only U.S. citizens and permanent residents eligible. Contact: **Dr. B. T. Mossman, Department of Pathology, University of Vermont College of Medicine, Burlington, Vt. 05405.** *The University of Vermont is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIP: Integrated research training in environmental and occupational pathobiology and toxicology. Special emphasis areas: cancer biology, cardiopulmonary and neuromuscular disease. Evidence of commitment to academic research career important. National Research Service Award; only U.S. citizens and permanent residents eligible. Contact: **Dr. B. T. Mossman, Department of Pathology, University of Vermont College of Medicine, Burlington, Vt. 05405.** *The University of Vermont is an Equal Opportunity/Affirmative Action Employer.*

Director, National Institute of Neurological and Communicative Disorders and Stroke

The National Institutes of Health invites nominations and applications for the position of Director, National Institute of Neurological and Communicative Disorders and Stroke (NINCDS). This Institute conducts, fosters, and supports research and research training on the causes, prevention, diagnosis, and treatment of neurological, sensory, communicative, and muscle disorders. The Institute's efforts cover the spectrum of basic, applied, and developmental research. Programs encompass intramural laboratory research and extramural (grants and contracts) activities in fundamental neurological disorders, stroke and central nervous system trauma, and communicative disorders.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$54,755 to \$61,300 per annum (currently limited to \$58,500) depending on qualifications. Candidates may be eligible for Physicians Comparability Pay up to \$10,000 per year. Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

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

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

Candidates who meet the mandatory requirements will be further evaluated by the Search Committee on the following factors: additional managerial/executive qualifications; scientific reputation/peer recognition; training and education; and honors and awards, and the degree to which they exceed the minimally qualified level of the mandatory managerial/executive qualifications.

Applications (Personal Qualifications Statement, SF-171) are to be sent to the Chairman, Search Committee for Director, NINCDS, National Institutes of Health, Building 1, Room 132, 9000 Rockville Pike, Bethesda, Maryland 20205. For further information contact Alfred L. Salas on (301) 496-6335. A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

Individuals who previously applied need not resubmit an application, but should indicate continued interest in the position by letter.

**National Institutes of Health
Public Health Service
Department of Health and Human Services**

Opening Date: August 1, 1982
Closing Date: August 15, 1982

(All applications must be post marked before closing date)

**The National Institutes of Health
is an Equal Opportunity Employer.**

Research & Development AAAS Report VII

The Federal Budget—FY 1983 Impact and Challenge

Willis H. Shapley, Albert H. Teich, and Jill P. Weinberg

"An essential document for anyone concerned about
the health of the nation."

—Edward E. David, Jr.

President, Exxon Research & Engineering Company

The most recent volume in AAAS's acclaimed **R&D Report Series** describes and analyzes the overall situation of R&D in the federal budget as well as trends in R&D funding in light of current policy issues.

The 1983 **Report** looks in detail at the R&D programs of major federal agencies. It includes cross-cutting analyses of the budget by several scientific and engineering disciplines. It also discusses the impact of funding cutbacks and changing priorities on research institutions such as colleges and universities, government laboratories, and industrial R&D establishments.

The **Report** does not advocate particular viewpoints on programs or policies. Rather, it provides an objective, detailed, compact, and thorough source of information intended to foster understanding of important policy choices.

176 pp. Paperback
ISBN 0-87168-256-7 \$8.00

Also available:

Research and Development in the Federal Budget Colloquium Proceedings, 1982

Edited by Albert H. Teich and Jill P. Weinberg

Includes papers by:

George A. Keyworth, II, Director, Office of Science and
Technology Policy

Frank Press, President, National Academy of Sciences

Senator Paul E. Tsongas

Senator Harrison (Jack) Schmitt

Representative Margaret Heckler

George R. White, Vice-President for R&D, Xerox
Corporation

David Shirley, Director, Lawrence Berkeley Laboratory

Available in the fall of 1982

Approx. 176 pp. Paperback

ISBN 0-87168-257-5 \$8.00

ORDER FORM

Name _____

Address _____

City, State, Zip _____

Orders under \$10 must be prepaid. Please allow 6-8 weeks for delivery. MasterCard and Visa customers please include the following information: ☐ Visa ☐ MasterCard

Complete acct. no. _____

Exp. date _____

Signature _____

Please send me the following (Please indicate quantities):

____ R&D: AAAS Report VII, paper, \$8.00

____ R&D: Colloquium Proceedings, 1982, paper, \$8.00
(available fall 1982)

Also available:

R&D Reports for ____ FY 1982 ____ FY 1981 ____ FY 1980
____ FY 1979 ____ FY 1978 ____ FY 1977. Paper, \$5.00 each

R&D Colloquium Proceedings for: ____ 1981 ____ 1980
____ 1979 ____ 1978 ____ 1977 ____ 1976. Paper, \$5.00 each

Mail orders to AAAS Sales Dept. RDX, 1515 Massachusetts Ave., NW, Washington, DC 20005
American Association for the Advancement of Science
