

On the whole, I found this book to be an excellent one. I will mention a few reservations, however.

First, some more detailed, if speculative, discussion of the role of early number concepts in later quantitative concepts would have been helpful. For example, do individual differences in older children's and adults' quantitative abilities derive from individual differences earlier on in the understanding and application of the principles suggested by Gelman and Gallistel, or must the source of variance in the performance of older individuals be sought elsewhere?

Second, the book does not make clear just what the psychological status of the principles is. Why, for instance, do the elementary component processes (a separate listing of which would have been helpful) combine into these particular principles and no others? Are these particular principles psychologically or arithmetically "natural" in some sense that other principles would not be? Is their existence something to be assumed or something to be proven? Further, what exactly does partial attainment of a principle mean? Is there some set of more elementary principles that are attained in an all-or-nothing manner? These and other such questions could have been addressed more fully.

Third, whereas Piagetian theory may ascribe too little to the preoperational child, I am concerned that Gelman and Gallistel are sometimes willing to ascribe a bit too much. In some cases, I would have preferred more stringent demonstrations of particular forms of competence or inferred performance. For example, the authors propose four criteria for satisfying the cardinality principle (pp. 95-96): (i) "the child counted (correctly or incorrectly) the number of items in the array and repeated the last tag: for example, 'two, sixteen; sixteen'; (ii) "the repetition of the last tag was sometimes given emphatic stress"; (iii) the child assigned number words "to each of the items in the set on one trial, for example 'one, two, three,' and shifted to a simple indication of numerosity of the same set without overt counting on a later trial"; (iv) the child "assigned the correct value to the set without counting aloud." These criteria are formulated in a somewhat less restrictive way than I might have chosen. My major concern, however, is with the fact that the authors judged a child to have mastered the cardinality principle if he or she met just one of them. In fact, table 8.3 suggests that satisfaction of the criteria was by no means all-or-none. In this and other cases, I would have been

more comfortable with a requirement for satisfaction of at least two criteria, or at least more detailed presentation of the number of children satisfying each criterion so that the reader could make up his or her own mind regarding satisfaction of the various principles.

Fourth and finally, I am concerned that this research, like virtually all pioneering research on psychological phenomena, relies too heavily upon formal systems that do not correspond to psychological reality. The authors note that they "compare the preschooler's arithmetic principles to the modern formal system of arithmetic in order to highlight various aspects of the preschooler's principles. The modern formalism is the only available backdrop, because no one, so far as we know, has formalized what might be called the layman's system of arithmetic" (p. 180).

In the history of psychological research such formalisms have often turned out to be red herrings. In research on propositional and syllogistic reasoning, for example, significant progress seems to have been made only after the principles of formal logic were dropped as bases for the laws of thought. In the quantitative domain, the research of Tversky and Kahneman on probabilistic and statistical reasoning in adults was striking in part because adults seem not to reason according to any accepted principles of probability and statistics. Thus, at least one goal for the next decade of research seems to emerge from the research of Gelman and others. The need now is for the missing characterization of the "layman's system of arithmetic," and for a similar characterization for children of different ages.

ROBERT J. STERNBERG

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New Haven, Connecticut 06520*

## Books Received

**Adolescent Boys in High School.** A Psychological Study of Coping and Adaptation. James G. Kelly, Ed. Erlbaum, Hillsdale, N.J., 1979 (distributor, Halsted [Wiley], New York). xvi, 268 pp. \$16.50.

**Biotechnology in Energy Production and Conservation.** Proceedings of a symposium, Gatlinburg, Tenn., May 1978. Charles D. Scott, Ed. Interscience (Wiley), New York, 1979. vi, 514 pp., illus. Paper, \$25. Biotechnology and Bioengineering Symposium, No. 8.

**Catalytic Hydrogenation in Organic Syntheses.** Paul Rylander. Academic Press, New York, 1979. x, 326 pp., illus. \$34.

**Defense and Recognition II.** E. S. Lennox, Ed. University Park Press, Baltimore, 1979.

Two volumes. Part A, Structural Aspects. x, 222 pp., illus. \$29.50. Part B, Cellular Aspects. x, 278 pp. \$29.50. International Review of Biochemistry, vols. 22 and 23.

**The Effects of Psychotherapy.** Vol. 1. Michael J. Lambert. Eden Press, St. Albans, Vt., 1979. x, 158 pp. \$20. Annual Research Reviews.

**Electricity and Man.** (Medical Application and Hazards.) V. Manoilov. Translated from the Russian edition (1975) by George Kittell. Mir Publishers, Moscow, 1978 (U.S. distributor, Imported Publications, Chicago). 160 pp., illus. Paper, \$2.50.

**Fundamentals of Analytical Flame Spectroscopy.** C. Th. J. Alkemade and R. Herrmann. Translated from the German by R. Auerbach and Paul T. Gilbert, Jr. Halsted (Wiley), New York, 1979. xii, 442 pp., illus. \$64.95.

**Gas Phase Ion Chemistry.** Vol. 2. Michael T. Bowers, Ed. Academic Press, New York, 1979. xvi, 346 pp., illus. \$38.

**Issues in Instructional Systems Development.** Harold F. O'Neil, Jr., Ed. Academic Press, New York, 1979. xii, 212 pp. \$17.50. The Educational Technology Series.

**Limits of Scientific Inquiry.** Gerald Holton and Robert S. Morison, Eds. Norton, New York, 1979. xviii, 254 pp. Cloth, \$15; paper, \$3.95. Originally published as vol. 107, No. 2, of the *Proceedings of the American Academy of Arts and Science*.

**Monte Carlo Methods in Statistical Physics.** K. Binder, Ed. Springer-Verlag, New York, 1979. xvi, 378 pp., illus. \$32. Topics in Current Physics, vol. 7.

**Narcotic Plants.** William Emboden. Macmillan, New York, ed. 2, 1979. xviii, 206 pp., illus. + plates. \$15.95.

**Optimization and Approximation.** W. Krabs. Translated from the German edition. Wiley-Interscience, New York, 1979. xii, 220 pp. \$28.95.

**Public Personnel Systems.** Robert D. Lee, Jr. University Park Press, Baltimore, 1979. xxii, 434 pp. \$19.95.

**Public Policy and Chronic Disease.** A Forum Sponsored by the National Arthritis Advisory Board. Sept. 1978. National Institutes of Health, Bethesda, Md., 1979. x, 122 pp., illus. Paper. NIH Publication No. 79-1896.

**Recent Advances in Acupuncture Research.** Frederick F. Kao and John J. Kao, Eds. Institute for Advanced Research in Asian Science and Medicine, Garden City, N.Y., 1979. xvi, 788 pp., illus. \$75.

**Syntax and Semantics.** Vol. 10, Selections from the Third Groningen Round Table. June 1976. Frank Heny and Helmut S. Schnelle, Eds. Academic Press, New York, 1979. xii, 382 pp., illus. \$35.

**Technological Progress in Latin America.** The Prospects for Overcoming Dependency. James H. Street and Dilmus D. James, Eds. Westview Press, Boulder, Colo., 1979. xxii, 258 pp. \$20. Westview Special Studies on Latin America and the Caribbean.

**A Textbook of Physical Chemistry.** Arthur W. Adamson. Academic Press, New York, ed. 2, 1979. xxviii, 954 pp., illus. + index. \$22.95.

**Women Physicians of the World.** Autobiographies of Medical Pioneers. Leone McGregor-Hellstedt, Ed. Hemisphere, Washington, D.C., and McGraw-Hill, New York, 1978. xviii, 420 pp., illus. \$24.50.

**The World Copper Industry.** Structure and Economic Analysis. Raymond F. Mikesell. Published for Resources for the Future by Johns Hopkins University Press, Baltimore, 1979. xviii, 394 pp. Cloth, \$24; paper, \$10.95.

# Personnel Placement

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## POSITIONS WANTED

**Anatomist, Ph.D.,** 7 years of experience in teaching medical histology and embryology. Active research and quality publications in immunohematopoietic system and developmental biology. NIH-funded ongoing research project. Box 83, SCIENCE. X

**Biologist/Medical Technologist, B.A. 1973, M.T. 1979.** Research experience with publications; clinical and industrial laboratory experience. Seeks challenging position in academic/research laboratory. Box 72, SCIENCE. X

**Cell Biologist/Parasitologist, Ph.D. 1976.** Background in physiology, membrane biochemistry, immunology of pathogenic protozoa. Knowledge of electron microscopy and operation of fluorescence activated cell sorter. Teaching and postdoctoral experience, publications. Adaptable to new disciplines. Seeks teaching/research/administrative position in industry, university, or government. Baltimore-Washington, D.C. area. Box 84, SCIENCE. X

**Evolutionary Ecologist/Zoologist.** Teaching experience: ecology, comparative vertebrate anatomy, human anatomy and physiology, zoology, entomology, herpetology, microbiology. Research interests include evolution of reproductive adaptations, zoogeography, conservation and captive propagation of endangered species, systematics and intestinal flora of reptiles. Publications, grants. Ph.D. summer 1980. Seeks academic or research position, available May 1980. Box 85, SCIENCE. X

**Ph.D. Immunologist, UCB 1962;** experience in immunology of connective tissue diseases, radiolabeling of immunoreactants, molecular immunology, microbial toxins. Four years of teaching college medical technology. Industrial R & D or academia at associate professor level. A few publications and patents. Salary negotiable. Box 86, SCIENCE. X

**Pharmacologist, Ph.D. 1977.** Broad background includes anti-inflammatory drug screening, chemical carcinogenesis, new drug screening for pharmacology and toxicology, biochemical pharmacology, and so forth. Seeking support/research position in government, industry, or medical center—no teaching. Box 66, SCIENCE. X

## POSITIONS WANTED

**Microbial Biochemist.** Substantial experience laboratory-pilot scale fermentations for SCP, enzymes for industrial use, and wastewater microbiology. Emigrating to Canada mid-1980. Seeks job in industry/research institute. Box 87, SCIENCE. 4/4, 11, 18

**Microbiology/Virology, B.S.,** 2 years of laboratory experience in tissue culture, viral assays, pyrogen detection. Experience in environmental laboratory and field work. W. Ingberg, Department of Virology, Baylor College of Medicine, Houston, Texas 77030. X

**Experienced Nature Writer/Photographer** seeking to accompany domestic and overseas science expeditions. R. Smith, 11162 Gravois, Apartment C, St. Louis, Missouri 63126. Telephone: 314-843-1529. 4/4, 11

**Pharmacologist, Ph.D.** Postdoctoral, teaching, and research experience. Strong background in transdermal, hepatic uptake, and drug interactions. Grants and publications. Seeks industrial, governmental, or academic position. Box 88, SCIENCE. 4/4, 11, 18, 25

## POSITIONS OPEN

**OKLAHOMA CITY—ACADEMIC PSYCHIATRIST,** University of Oklahoma Health Sciences Center, full-time assistant or associate professor level. EEO Number 185. Director, 22-bed psychiatric unit. Duties: (i) designated attending, (ii) coordinator of educational/clinical program, (iii) supervision of residents and medical students, (iv) coordinate milieu therapy for admissions by other faculty. Treatment approach must be eclectic with multidisciplinary team; full-time psychologist and social worker are on unit; short-term crisis intervention and longer term treatment for older adolescents must be available; long-standing therapeutic community with active nursing participation is a tradition. Salary in competitive range plus private practice supplement. Excellent academic fringe benefits. Candidate must be Board-certified or eligible. Write: Gordon Deckert, M.D., Chairman, P.O. Box 26901, Oklahoma City, Okla. 73120.

## ANATOMISTS

The Department of Anatomy, The University of Texas Medical Branch at Galveston, Texas, invites applications for two tenure-track positions at the assistant, associate, or full professor levels beginning August 1980 or earlier. Applicants should hold the Ph.D. in anatomy and/or M.D., and should be qualified to teach either gross anatomy or microscopic anatomy to medical and graduate students.

Only persons with demonstrated independent and continued research capability are encouraged to apply. Salary and rank are dependent upon qualifications and experience. Applicants are invited to submit curriculum vitae, names and addresses of three references, and a letter describing teaching and research interests to:

Walther J. Hild, M.D.  
Department of Anatomy

c/o Personnel Office  
The University of Texas Medical Branch  
UTMB Substation  
Box 146

Galveston, Texas 77550

Deadline for receipt of applications is 1 June 1980. The University of Texas Medical Branch is an Equal Opportunity Employer, M/F/H.

## ASSISTANT PROFESSOR OF ZOOLOGY THE OHIO STATE UNIVERSITY DEPARTMENT OF ZOOLOGY LIMA REGIONAL CAMPUS

The responsibilities of this position include teaching in introductory biology, introductory zoology, plus a course in specialty at sophomore level. A Ph.D. is required with teaching and research experience. This appointment is renewable annually beginning September 1980 for a maximum of 3 years. Salary commensurate with training and experience.

Send curriculum vitae and three letters of recommendation to: Professor Tony J. Peterle, Chairperson, Department of Zoology, The Ohio State University, 1735 Neil Avenue, Columbus, Ohio 43210. Applications must be received by 18 April 1980.

The Ohio State University is an Equal Opportunity/Affirmative Action Employer. All qualified persons, including women, members of minority groups, and the handicapped are encouraged to apply.

## POSITIONS OPEN

### UNIVERSITY OF GUELPH Department of Animal and Poultry Science ANIMAL BREEDER

Ph.D. in animal breeding with background in statistical genetics. Experienced in data analysis methodology and in working with animal breeding industry. Responsible for developing a research programme and teaching undergraduate and graduate students. Appointment at assistant professor on probationary basis or associate professor level. Position subject to final budgetary approval. Applications accepted to 1 May 1980 or until position filled.

Direct replies to: W. D. Morrison, Professor and Chairman, Department of Animal and Poultry Science, Ontario Agricultural College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.

**APPLIED POLICY ANALYST.** Radian Corporation is seeking an applied policy analyst to work on technology assessment, regulatory analysis, and environmental analysis problems. Applicants should have an advanced degree, experience in the above problem areas, and strong writing skills. Disciplines of particular interest are political science, economics, engineering, and geography. Please send résumé and salary history to: Radian Corporation, Manager of Employee Relations, P.O. Box 9948, Austin, Texas 78766. Equal Opportunity Employer.

### T. H. MORGAN SCHOOL OF BIOLOGICAL SCIENCES ASSISTANT PROFESSOR

One or more positions available in the general area of microbiology. Duties include development of a vigorous research program and teaching undergraduate and graduate courses in fields of interest. Applications are invited particularly from individuals with research interests in immunology and/or molecular biology. Send complete curriculum vitae, including a description of research interests, and have letters submitted by three references to: Microbiology Search Committee, T. H. Morgan School of Biological Sciences, University of Kentucky, Lexington, Kentucky 40506. An Equal Opportunity/Affirmative Action University.

### ASSISTANT PROFESSOR, FISH NUTRITIONIST.

The Department of Animal Science and Aquaculture Program, University of California, Davis, are seeking an assistant professor in fish nutrition, (30 percent teaching/70 percent research), to commence 1 July 1980. Applicants must have a strong research interest in the physiology and biochemistry of fish nutrition with a Ph.D. in an appropriate discipline. The appointee will be expected to teach undergraduate and graduate courses on fish and comparative nutrition and to develop a research program emphasizing nutrition and metabolism in fish of commercial significance to aquaculture. Applicants should submit their curriculum vitae, transcripts, bibliography, reprints, and the names and addresses of at least three persons familiar with their work to: S. I. Doroshov, Chair, Search Committee, Department of Animal Science, University of California, Davis, California 95616, by 15 May 1980.

In compliance with federal and state laws and university policy, the University of California does not discriminate on the basis of race, color, national origin, religion, sex, handicap, age, or against disabled veterans or veterans of the Vietnam era. The University of California is an Affirmative Action/Equal Opportunity Employer.

**ASSOCIATE LABORATORY DIRECTOR FOR LIVER RESEARCH PROGRAM** at Cleveland Clinic Foundation (CCF). Joint appointment in medicine and basic science departments for Ph.D. with potential for tenure equivalency. Position requires leadership capability and offers independence potential to a person with strong background in protein biochemistry including familiarity with current techniques in immunochemistry and cell biology. Send replies to: GI Research Unit, CCF, 9500 Euclid Avenue, Cleveland, Ohio 44106.

**BIOLOGY.** Tenure-track position beginning September 1980. Instruct undergraduate courses in biology with particular emphasis on microbiology-virology for biology and pharmacy majors. Coordinate a multisection course for nonscience majors. Minimum qualifications include M.A. or M.S. in biology with concentration in medical microbiology. The college stresses effective teaching. Starting range for instructor: \$10,000 to \$13,000. Send application by 25 April to: Dean of Arts and Sciences, Western New England College, 1215 Wilbraham Road, Springfield, Mass. 01119. An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

### ASSISTANT PROFESSOR MICROBIOLOGY AND IMMUNOLOGY

Applications are invited for an appointment as an assistant professor in the Department/Program of Microbiology and Immunology, the College of Science and Engineering, and the School of Medicine, Wright State University. Applicant must have a Ph.D. with a minimum of 1 year of postdoctoral research experience in the area of pathogenesis of bacterial toxins and documentation of effective teaching. Applicants should send curriculum vitae, statement of research and teaching interests, and three letters of recommendation by 15 May 1980 to: Search Committee, Department of Microbiology and Immunology, 409 Oelman Hall, Wright State University, Dayton, Ohio 45435. *Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSOR, PLANT PATHOLOGY

The Department of Plant Pathology at the University of California, Riverside, has a full-time, tenure-acquiring position open for an assistant professor specializing in applied and basic research on diseases of avocado and subtropical plants. A Ph.D. in plant pathology is required and an academic background in plant pathology, mycology, microbiology, epidemiology, and ecology of soil-borne microorganisms are desirable. At present, root rot caused by *Phytophthora cinnamomi* is the most important disease of avocado. Send résumé, three confidential letters of recommendation, and complete transcripts to Dr. John A. Menge, Department of Plant Pathology, University of California, Riverside, Calif. 92521. Deadline for applications is 1 May 1980, or later if a suitable applicant has not been selected. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

The University of California, Irvine, College of Medicine, offers a position for an ASSISTANT RESEARCH NEUROPHYSIOLOGIST, Ph.D., to direct study of clinical uses of evoked potentials in neurological disorders with particular attention to electrophysiological correlates of cognitive disorders. Knowledge of digital computer use and programming, and prior experience in human evoked potentials required. Position available 1 July 1980. Deadline for receipt of applications is 2 May 1980. Send curriculum vitae and request three referees to send letters of reference to: Arnold Starr, M.D., Department of Neurology, University of California, Irvine, Calif. 92717. Appointment is for 3 years duration, contingent on grant funding. *Affirmative Action Employer.*

### CANCER/CELL BIOLOGY/GENETICS

Applications are invited for the position of assistant professor in the Cancer Research Laboratories of the Department of Pathology, Queen's University, Kingston, Ontario, Canada. This is a limited, short-term (3 years) appointment, but could be renewable on a competitive basis. Applicants must have a background in cell biology and immunobiology with an interest and, preferably, a training in somatic cell genetics. Applications, with curriculum vitae, should be forwarded to: Dr. David M. Robertson, Professor and Head, Department of Pathology, Queen's University, Kingston, Ontario, Canada K7L 3N6.

### CELL SURFACE BIOCHEMISTRY IMPERIAL CANCER RESEARCH FUND

Imperial Cancer Research Fund intends to appoint an independent scientist in the field of cell surface biochemistry at its Mill Hill Laboratories. The appointee will be required to establish a small research group within this area. It is anticipated that the group will move to the Fund's laboratories in Lincoln's Inn Fields prior to closure of the Mill Hill Laboratories in 1986.

The Mill Hill Laboratories currently include two groups working on cell differentiation in *Dictyostelium* and during embryonic development. The new group would be expected to establish close interactions with the present groups. The prospective research programme can be in any area of the cell surface although preference may be given to the role of the cell surface in development or in cell-cell recognition. Previous experience in cell surface biochemistry is essential.

The initial appointment is for 5 years, with a possibility of eventual transfer to the permanent staff. It will be in MRC nonclinical Grade 1 (current salary range: £7227 to £8992 a year, plus London allowance: £740 a year). Applicants should send curriculum vitae, the names of three referees, and a résumé of their proposed programme to: The Secretary, Imperial Cancer Research Fund, Lincoln's Inn Fields, London, W.C.2., England.

## POSITIONS OPEN

### BIOCHEMISTRY FACULTY POSITION

The School of Liberal Arts and Sciences invites applications for a full-time, tenure-track position at the assistant professor level, available as of September 1980. Teaching load includes undergraduate biology and biochemistry courses. Research activity encouraged. Ph.D. and teaching experience required. Knowledge of nutrition and chemical instrumentation desirable. Salary commensurate with qualifications. Submit résumés and transcripts of graduate studies by 30 April 1980 to: Professor Paul Friedman, Department of Chemistry, Pratt Institute, 200 Willoughby Avenue, Brooklyn, New York 11205.

*Affirmative Action/Equal Opportunity Employer*

### BIOCHEMISTRY VISITING ASSISTANT PROFESSOR

The Molecular Biology Section at the University of Southern California invites applications for a 1-year appointment to replace a biochemistry professor on sabbatical leave for 1980-1981 academic year. Applicant will teach part or all of courses in introductory and advanced undergraduate biochemistry and enzymology at the graduate level. Submit curriculum vitae, including teaching experience, by 15 May 1980 to: Search Committee, Molecular Biology, ACBR 126, University of Southern California, Los Angeles, California 90007. *An Equal Opportunity/Affirmative Action Employer.*

**BIOLOGIST**—Specialist or laboratory instructor available September 1980. Candidate will be expected to teach the laboratory component of an integrated two-semester human physiology and anatomy course for allied health students; preference will be given to candidates who can also teach laboratories in introductory life science. Minimum qualifications: master's degree and some teaching experience. Send résumé, transcripts, and three letters of reference within three weeks of the publication of this notice to: Coordinator, Life Science Program, University of Wisconsin-Parkside, Kenosha, Wisconsin 53141. Telephone: (414) 553-2327. *An Equal Opportunity/Affirmative Action Employer.*

**BOTANY—NATURAL HISTORY: UNIVERSITY OF CALIFORNIA, SANTA CRUZ.** Assistant professor, Environmental Studies Board. Ph.D. with teaching and research experience for entry-level, tenure-track position in interdisciplinary field-oriented program. Must have teaching and research specializations in the ecology of flora and vegetation with emphasis on California's floristic diversity. Duties will include graduate and undergraduate teaching and research with strong emphasis on field methods and conservations of native plant resources. Preference given to applicants with wide general breadth and teaching capabilities in conservation of natural resources, particularly with biological emphasis. Send résumés, publications, and letters of professional recommendation to: Robert Curry, Provost, College Eight, University of California, Santa Cruz, Calif. 95064, by 25 April 1980. *The University of California, Santa Cruz, is an Equal Opportunity/Affirmative Action Employer.*

**CHEMICAL OCEANOGRAPHER**—Associate professor for 12-month, tenure-track position in marine organic or biochemistry. Applicants must have a Ph.D. and must have demonstrated ability to conduct independent research and to obtain research funding in marine chemistry. The appointee will be expected to teach introductory chemical oceanography courses and others in his or her specialty, supervise graduate students, and develop a program of grant-funded research. Interested candidates should submit résumés and names of three or more references by 1 May 1980 to: G. Ross Heath, Dean, School of Oceanography, Oregon State University, Corvallis, Ore. 97331. *Oregon State University, an Affirmative Action/Equal Opportunity Employer, complies with Section 504 of the Rehabilitation Act of 1973.*

### CHEMISTRY/BIOLOGY INSTRUCTOR CLARK COUNTY COMMUNITY COLLEGE

Tenure-track position. Doctorate preferred. Teach introductory chemistry, lecture and laboratory for allied health students. Participate in general biology offerings. Major academic preparation should be in chemistry with strong support in biological sciences. Community college teaching experience preferred. Dependent upon availability of funds. Send curriculum vitae, three letters of recommendation, and official college transcripts to: Thomas Brown, Associate Dean, Personnel, Clark County Community College, 3200 East Cheyenne Avenue, North Las Vegas, Nevada 89030. Deadline for applicant's file is 1 May 1980. *An Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### CHAIRMAN DEPARTMENT OF ANATOMY GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE

The school is conducting a search for qualified candidates for a professor and chairman of the Department of Anatomy. Applicants should have demonstrated competence in teaching, research, and administration. *Georgetown University is an Affirmative Action/Equal Opportunity Institution in employment and admissions.* Letters from interested persons or proposals for the position should be addressed to:

Frank G. Standaert, M.D.  
Chairman, Anatomy Search Committee  
Georgetown University School of Medicine  
3900 Reservoir Road, NW  
Washington, D.C. 20007

### CHAIRMAN DEPARTMENT OF RADIOLOGY GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE

The school is searching for a professor and chairman of the Department of Radiology who will also serve as Chief of the Radiology Service at Georgetown University Hospital. Applicants should be certified or Board-eligible in radiology with appropriate clinical competence as well as appropriate teaching, research, and administrative skills. *Georgetown University is an Affirmative Action/Equal Opportunity Institution in employment and admissions.* Letters from interested persons or proposals for the position should be addressed to:

John F. Potter, M.D.  
Chairman, Radiology Search Committee  
Georgetown University Hospital  
3800 Reservoir Road, NW  
Washington, D.C. 20007

**WASHINGTON STATE UNIVERSITY** invites nominations and applications for the position of **CHAIR** of the Department of Forestry and Range Management.

The department is composed of 21 faculty, 42 graduate students (master's), and 309 undergraduate students. Major teaching, research, and extension activities include facets of forestry, range management, wildlife habitat management, and wildland recreation.

**Qualifications:** Ph.D. in a professional discipline represented in the department or closely allied to those disciplines; administrative skill or potential knowledge of the university environment, preferably including undergraduate and graduate teaching experience; and sound credentials in an area of research represented in the department or closely allied to it.

**Appointment:** July 1980.

**Salary:** Negotiable.

**Applications:** Submit letter of intent, résumé, and names and addresses of at least three references to: Ben F. Roche, Jr., Chairman-Search Committee, Department of Forestry and Range Management, Washington State University, Pullman, Washington 99164.

**Deadline:** 30 April 1980 or until a suitable applicant is found.

*Washington State University is an Equal Opportunity/Affirmative Action Employer. We encourage minority, women, handicapped, Vietnam-era and disabled veterans, and/or aged persons to apply and identify themselves as such in their applications.*

**CHIEF OF ENDOCRINE AND METABOLISM.** Academic full-time position open for an associate or full professor. Applicants must have strong research and clinical experience as well as leadership qualities. Send curriculum vitae to: Francis J. Tedesco, M.D., Chairman, Search Committee, Section of Gastroenterology, Department of Medicine, Medical College of Georgia, Augusta, Georgia 30912. *An Affirmative Action/Equal Opportunity Employer.*

**CLINICAL CHEMIST.** Doctoral degree and experience in general clinical chemistry, toxicology, and endocrinology is required for position as assistant head of Clinical Chemistry Laboratory, with a faculty appointment in the Department of Pathology. Responsibilities will be for service work within the Clinical Laboratories, teaching residents and graduate students, and the performing of research. *Applicants will be reviewed without regard to race, color, sex or creed. We encourage applications from women and minorities. The University of California is an Equal Opportunity Employer.* Send curriculum vitae to: Denis O. Rodgerson, Ph.D., Professor of Pathology, Center for the Health Sciences, University of California, Los Angeles, Calif. 90024.

## POSITIONS OPEN

### CHAIRPERSON

The Department of Chemistry at Indiana University-Purdue University at Indianapolis (IUPUI) invites applications for the position of chairperson. Candidates must have strong leadership abilities to represent the department externally, be successful in program development, and be established contributors to the chemical literature. The department of 15 has excellent programs at both the undergraduate and graduate (master's) levels. Active research complements excellent teaching. A novel master's program links the department with local industry. The university of 21,000 plus students provides a challenge for growth in an urban setting. Application deadline is 15 May 1980. Send curriculum vitae to: **Dr. Erwin Boschmann, Department of Chemistry, Indiana University-Purdue University at Indianapolis, 1201 East 38 Street, Indianapolis, Ind. 46205. IUPUI is an Equal Opportunity/Affirmative Action Employer.**

### DEPARTMENT CHAIRPERSON

The School of Public Health, University of North Carolina at Chapel Hill, invites applications for the position of professor and chairperson of the Department of Parasitology and Laboratory Practice, comprised of seven full-time faculty. The department's programs include graduate studies in public health laboratory practice, human parasitism, and biohazard science. Challenging opportunity exists to develop new related areas. Candidates must have distinguished records in teaching and research in one of the biological sciences, demonstrated managerial and leadership experience, plus the ability to attract research funds. Salary is negotiable. Nominations and applications, including curriculum vitae and the names of at least three references, should be sent prior to 15 June 1980 to: **Professor Alvis G. Turner, 132 Rosenau Hall, 201H, University of North Carolina, Chapel Hill, N.C. 27514. The University of North Carolina is an Affirmative Action/Equal Opportunity Employer.**

Possible opening fall 1980 for **VISITING FACULTY MEMBER IN CHEMISTRY**. Ability to teach introductory and advanced organic required. Evergreen is a 4-year, accredited liberal arts college which emphasizes team-taught interdisciplinary students. No departments. For information, contact: **Dr. Willard Humphreys, Academic Dean, L2219, The Evergreen State College, Olympia, Wash. 98505. Closing: 18 April 1980. An Affirmative Action/Equal Opportunity Employer.**

**ENDOCRINOLOGIST.** Tenure-track position at the assistant or associate professor level available on or after 1 September 1980. A doctoral degree and post-doctoral experience are required. The successful applicant will be expected to develop a vigorous research program in **NEUROENDOCRINOLOGY** and to teach approximately half-time in animal histology, undergraduate human anatomy/physiology, or introductory biology. Opportunity exists to develop an advanced course in area of interest and to collaborate in teaching graduate and first-year medical students. Submit application with curriculum vitae and the names of three references to: **P. K. Crowle, Department of Biology, Lewis Hall, Montana State University, Bozeman, Montana 59717 by 1 June 1980. Montana State University is an Equal Opportunity/Affirmative Action Employer.**

A position is available for an **ENGINEER OR SCIENTIST** with responsibility for the maintenance and development of equipment in an x-ray diffraction laboratory. The work of the laboratory concerns the structure determination of biological macromolecules. Applicants should have a bachelor's degree in physics, electrical or mechanical engineering. Salary in the range of \$14,000 to \$20,000, depending on experience. Apply to: **Professor Michael G. Rossmann, Department of Biological Sciences, Purdue University, West Lafayette, Indiana 47907.**

*Purdue University is an Equal Opportunity/Affirmative Action Employer.*

### ENVIRONMENTAL CONSULTANTS

Breedlove Associates, Inc., a rapidly growing, Florida-based environmental consulting firm is seeking scientists in the fields of hydrology, wetland evaluation and restoration, water quality assessment and management, and botanical surveys. Persons with advanced degrees and management experience are preferred. Salary commensurate with qualifications and experience. Submit résumés with professional and personal qualifications, references, and salary history to: **Box 80, SCIENCE. All information will be kept in strict confidence. We are an Equal Opportunity Employer.**

## POSITIONS OPEN

### DEAN AND MEDICAL FACULTY

**THE AMERICAN UNIVERSITY OF THE CARIBBEAN**, School of Medicine, located in Montserrat West Indies, has the following openings:

#### DEAN OF MEDICAL SCIENCE

Experience in medical education, M.D. or Ph.D. in medical science area. Duties include administration and teaching.

#### FACULTY OPENINGS

In the fields of anatomy, biochemistry, microbiology, pharmacology, physiology, and pathology. M.D. or Ph.D. required; 12-month contract.

Send résumé and required salary to:

**American University of the Caribbean  
U.S. Office  
100 Northwest 37 Avenue  
Miami, Florida 33125  
Telephone: 305-643-1150**

### DIRECTOR OF TOBACCO AND HEALTH INSTITUTE

Candidates for the position of director of the University of Kentucky Tobacco and Health Research Institute are being sought. The Tobacco and Health Research Program was established to facilitate a multidisciplinary research effort designed to identify and resolve the tobacco and health issue. The institute coordinates and administers the program within the university's colleges and departments. The director of the institute is responsible for the general administration of the institute, including budget preparation and fiscal management, public relations, and institute personnel management. Additionally, the director oversees the technical and research support services of the institute. Because of the broad range of responsibilities of the directorship, an established person with a national reputation is being sought. Additionally, candidates should possess a Ph.D. or M.D. degree, have significant experience with both research and administration, possess a broad understanding of the health field, and have suitable academic credentials to qualify for a faculty appointment in the university. Send résumé with salary history before 30 April to: **William L. George, Manager of Recruitment and Employment, Campus Employment Office, 350 Service Building, Lexington, Ky. 40506.**

*Equal Opportunity Employer, M/F/H*

### FACULTY POSITION FACULTY OF PHARMACY UNIVERSITY OF TORONTO

Applications are invited for a tenure-stream appointment at the level of assistant or associate professor and commencing 1 July 1980. Priority will be given to candidates offering experience in the areas of either clinical pharmacy or physical chemistry as applied to pharmacy, but highly qualified candidates working in other areas of pharmaceutical science would also be considered. The successful applicant will have had postdoctoral experience and will be expected to continue with research and teach undergraduate and graduate pharmacy students. A background in pharmacy would be useful but not essential. Applications with résumés and names of references should be forwarded to: **R. M. Baxter, Dean, Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada M5S 1A1.**

**PLANKTON BIOLOGIST.** The Chesapeake Biological Laboratory of the University of Maryland's Center for Environmental and Estuarine Studies is seeking an individual with a well-developed research program who has field and laboratory experimental interests in secondary productivity, trophic dynamics, and community structure of estuarine/marine ecosystems. Rank and salary are open for this tenured or tenure-track position, but preference will be given to individuals who qualify at the rank of professor or associate professor. The successful candidate will be eager to interact with graduate students and to collaborate in cognate programs. Contact: **Chairman, Search Committee, Chesapeake Biological Laboratory, P.O. Box 38, Solomons, Maryland 20688. The University of Maryland is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### DIRECTOR OF ANIMAL CARE

Memorial University of Newfoundland is seeking a director of animal care to be located in St. John's, Newfoundland, Canada, with overall responsibility for its Animal Care Facility. Preference is directed towards a person possessing a D.V.M. degree or equivalent qualification and with experience with laboratory animals. The director may hold an academic appointment in medicine and/or in another faculty, if appropriate. Salary to be negotiated. Application with curriculum vitae and names of three referees should be addressed to: **Dr. N. J. Gogan, Chairman, Search Committee for the Director of Animal Care, Office of Research, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3X7. Closing date: 30 April 1980.**

### UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER

#### DIRECTOR, Health Sciences Center Library

This position is open immediately at the University of Oklahoma Health Sciences Center. Annual operations budget over \$500,000, with an ever-improving acquisitions budget. There are 3,000 health professional students on the campus in six health-related colleges. Library services are provided on the campus to eight other health institutions. In addition, medical library services are provided to hospital libraries and practicing physicians across the state of Oklahoma. Representative qualifications include minimums of master's degree in library science, 4 to 6 years of increasingly responsible professional library experience including supervision of library staff personnel, and medical library certification or the equivalent. Previous experience as a head librarian is desirable. Salary negotiable. Faculty status determined by qualifications. Forward applications to: **Thomas N. Lynn, M.D., Dean, College of Medicine, P.O. Box 26901, Oklahoma City, Oklahoma 73190, not later than 1 June 1980. The University of Oklahoma Health Sciences Center is an Equal Opportunity/Affirmative Action Employer.**

**DIRECTOR, LABORATORY ANIMAL FACILITIES.** Seek individual with D.V.M. from an approved School of Veterinary Medicine, and 5 to 7 years in laboratory animal facility or comparable alternative experience. Will administer veterinary services for research and teaching in a new animal facility serving Health Sciences Center and University Center. Veterinary care includes diagnostic laboratory and pathological services and program for preventive and therapeutic medicine. Administrative responsibility includes fiscal management, setting charges and billing, and purchasing and maintaining animals. Contact: **Dr. Felix T. Rapaport, Chairman, Search Committee, Office of the Vice President, Health Sciences Center, State University of New York at Stony Brook, Long Island, N.Y. 11794. An Equal Opportunity/Affirmative Action Employer.**

### FACULTY POSITION IN PLANT BIOLOGY UNIVERSITY OF CHICAGO

The Department of Biology invites applications for a faculty position in plant biology. We are seeking an individual who is preferably working in part at the whole organism level, and with research and teaching interests that will complement the existing program. Areas of interest include, but are not limited to, ecology and physiology. Applicants must have demonstrated potential for development of an independent research program and excellence in teaching. Curriculum vitae, bibliography, and the names and addresses of references may be sent to:

**Chairman  
Plant Biology Search Committee  
Department of Biology  
The University of Chicago  
5630 South Ingleside Avenue  
Chicago, Illinois 60637**

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

**GENERAL SURGEON WITH BACKGROUND IN TRAUMA.** Applicants must have satisfactorily completed a surgical residency or be Board-eligible or certified with experience in a supervisory role in an emergency service at a teaching hospital. Joint appointment with Yale University and Yale-New Haven Hospital. Position will require a major commitment to education of medical students and residents in trauma and development of research in this area. Submit complete curriculum vitae to: **Arthur E. Baue, M.D., Chairman, Department of Surgery, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut 06511. Yale University is an Equal Opportunity/Affirmative Action Employer.**



## POSITIONS OPEN

### CHAIRPERSON

Department of Biomedical Engineering  
BOSTON UNIVERSITY

Nominations and applications are invited for an outstanding individual to chair the Department of Biomedical Engineering at Boston University's College of Engineering. Boston University is a private institution dedicated to quality teaching and research with a rapidly developing College of Engineering. The Department of Biomedical Engineering has nine full-time and adjunct faculty who are active in research programs at Boston University School of Medicine and elsewhere. The department instructs over 100 students and offers well-established degree programs in the field. Qualifications sought for the chairperson include a capacity for academic leadership, an understanding of the interdisciplinary nature of biomedical engineering, interest in high quality teaching, and a strong commitment to research. Experience in curriculum development, graduate and undergraduate teaching, and supervision of graduate students is highly desirable. The rank of the appointment is at the full/associate professor level. Candidates should send a complete résumé, including a list of publications and the names of at least four references, to: Dr. Robert J. McLaughlin, Chairman, Biomedical Engineering Search Committee, Boston University College of Engineering, 110 Cummington Street, Boston, Mass. 02215. Boston University is an Affirmative Action/Equal Opportunity Employer.

**CENTER FOR ENVIRONMENTAL STUDIES AT THE BANDUNG INSTITUTE OF TECHNOLOGY.** The U.S. Agency for International Development (AID) seeks individual for a 2-year contract to help establish an interdisciplinary center to address environmental aspects of planning human settlements and industrial development in Indonesia. Duties are: to administer AID grant; to strengthen center research and training programs; to build ties to similar U.S. institutions; to establish information clearing house; and to advise AID on funding future activities. Applicant should have developing country experience, multifield applied research experience, and natural science degree, preferably Ph.D. Contact: Environment Office, U.S. AID, American Embassy, Jakarta, Indonesia by 30 April 1980.

**ENVIRONMENTAL STUDIES COORDINATOR/ENVIRONMENTAL BIOLOGIST OR GEOLOGIST.** Tenure-track position of assistant/associate professor available September 1980. Duties include coordinating the Environmental Studies Program, teaching environmental science, and biology or geology, and research. Postdoctoral experience preferred. Send curriculum vitae, evidence of teaching and research proficiency, and three letters of reference to: Dr. John Parker, Department of Physical Sciences, Florida International University, Miami, Florida 33199 by 15 May 1980. Florida International University, a part of the Florida State System, is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

**FACULTY POSITION IN PATHOLOGY.** The Department of Pathology at University of California, Los Angeles (UCLA) School of Medicine invites applications for the position of **ASSISTANT PROFESSOR**. Candidates must be Board-eligible or Board-certified in anatomic pathology or anatomic and clinical pathology and must have an active interest in research. *Qualified women and minority candidates are encouraged to apply.* Send curriculum vitae, publication list, brief résumé of research program, and names of four referees to: Julien L. Van Lancker, M.D., Department of Pathology, UCLA School of Medicine, Los Angeles, California 90024. An Equal Opportunity/Affirmative Action Employer.

### FACULTY POSITION

Department of Forestry  
University of Illinois

Assistant professor in the Department of Forestry, University of Illinois, to conduct research in forest biology and forest ecology.

**Qualifications:** Ph.D. in biology and/or ecology with background in forestry.

**Position:** Open 21 August 1980. Salary commensurate with training and experience.

**Application:** Send résumé and three letters of reference by 15 May 1980 to: Dr. I. I. Holland, Head, Department of Forestry, University of Illinois, Urbana, Illinois 61801.

For further information, write above address or telephone: 217-333-2770.

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

## POSITIONS OPEN

### FACULTY POSITION

The University of Texas Medical Branch  
Galveston, Texas

The Department of Psychiatry and Behavioral Sciences is seeking a statistician with expertise in quantitative methods, research design, and data analysis. Must be especially experienced in biobehavioral science areas. Applications are invited for a tenure-track faculty position, especially from candidates who qualify for associate or full professor rank. Primary responsibility would be to serve as a research collaborator with other faculty members in addition to pursuing independent scholarship. The department is intensively research-oriented and supports faculty research with its own interactive computer currently capable of handling approximately 20 simultaneous users with COSAP and BMDP statistical packages.

Send curriculum vitae to: Seymour Fisher, Ph.D., Professor and Associate Chairman, Department of Psychiatry and Behavioral Sciences, University of Texas Medical Branch, P.O. Box 146, Galveston, Texas 77550.

An Equal Opportunity/Affirmative Action Employer

### PHYSIOLOGY/ECOLOGY/BEHAVIOR

The Department of Biology at the University of California, Riverside, invites applications for an appointment at the assistant professor level with duties to begin September 1980. We seek individuals doing active research combining animal physiology and ecology or behavior, and willing to teach in these areas at the undergraduate and graduate levels. Applications, including curriculum vitae, statement of research and teaching interests, reprints, and three letters of recommendation, should be sent by 1 May 1980, to:

Professor R. Ruibal, Chairman  
Department of Biology  
University of California  
Riverside, California 92521

The University of California is an Equal Opportunity/Affirmative Action Employer. Applications are invited from all qualified individuals, especially women and members of minority groups.

## POSITIONS OPEN

**INSTRUCTOR/ASSISTANT PROFESSOR OF ZOOLOGY** (faculty-in-residence for a 1-year term, non-tenure-track, renewable annually upon review for up to 3 years) to begin 1 September 1980. Primary responsibility each semester for a team-taught laboratory course in introductory zoology for life-science majors and an additional biology course for non-majors. Qualifications: an advanced degree and an individual with superior teaching abilities, particularly excellence in the instruction of large groups. A research program is not required. By 9 May 1980 contact: Professor C. W. Walker, Department of Zoology, Spaulding Hall, University of New Hampshire, Durham, N.H. 03824. The University is an Affirmative Action/Equal Opportunity Employer.

### MARINE SUPERINTENDENT

Scripps Institution of Oceanography (SIO)  
University of California, San Diego (UCSD)

Manages and provides the services of SIO fleet and marine facilities in direct support of basic scientific and academic research of the institution. Establishes rules and procedures and safe and economical operation of the fleet. Must have knowledge of ship operations and marine engineering technology; demonstrated management skills; budgetary and fiscal management experience; oral and written communication skills. Experience in research ship operations and Coast Guard license as marine engineer or deck officer desired. Salary commensurate with experience. Résumé must be received by 22 April 1980. Send to: Joann Howarth, Staff Personnel Management Office, Q-016, (7765-H), UCSD, La Jolla, Calif. 92093. All qualified applicants are encouraged to apply. Equal Opportunity/Affirmative Action Employer.

**MINERALOGIST**/East Carolina University. Position available for fall 1980, assistant professor, tenure-track. Responsibilities include teaching elementary and advanced classes, development of a significant research program, and directing graduate students. Send résumé, summary of research interests, and three letters of recommendation to: C. Q. Brown, Chairman, Department of Geology, East Carolina University, Greenville, North Carolina 27834. An Affirmative Action/Equal Opportunity Employer.

# CANCER EXPERT

The National Institutes of Health, Public Health Service, Division of Cancer Treatment, National Cancer Institute, is seeking applicants for an "Expert Position" to develop and manage a contract program devoted to the use of human tumor stem cells for screening new potential antitumor drugs. Fundamental studies have indicated that human tumor stem cell assays may provide models for drug screening with greater clinical predictive value for treatment of specific human cancers. The objective of this project is to determine the feasibility of using such models for the screening of approximately 1,000 materials per year. In addition to developing and managing this new contract project, the successful applicant will be expected to manage the ongoing contract-based *in vitro* screening program involving measurement of cytotoxicity to KB, L1210, or P388 cells; the latter assays are used primarily as bioassays for following the activity of natural products through the process of fractionation to isolate the active material.

Applicants must have an M.D. degree or Ph.D. in a related field of study or equivalent training and must have attained highly professional laboratory experience in the development and use of cell culture techniques. Supervisory and managerial experience is desirable.

The position of "Expert" has a duration of 2 years, with the possibility of being extended for an additional period. The responsibilities and pay are equivalent to that of a Section Head. The salary range will be \$29,375-\$35,000, depending on expertise and experience of the individual selected for the position.

Interested persons should respond to Dr. Vincent T. Oliverio, Associate Director, Developmental Therapeutics Program, DCT, NCI, Blair Building, Room 5A03, 8300 Colesville Road, Silver Spring, Maryland 20910. Please include a complete curriculum vitae. It would be appreciated if persons active in this field of research, and who know individuals who may be qualified, interested, and available would transmit this notice appropriately. An Equal Opportunity Employer.

## NATIONAL INSTITUTES OF HEALTH

## POSITIONS OPEN

### UNIVERSITÉ LAVAL FACULTY APPOINTMENT IN INORGANIC OR ANALYTICAL CHEMISTRY

Applications are invited for a tenurable position in inorganic or analytical chemistry in the Department of Chemistry of Université Laval.

According to experience, the appointment will be at the assistant, associate, or full professor level. Applicants should have a Ph.D. in inorganic or analytical chemistry and, preferably, postdoctoral experience. Equivalent experience in related fields could be considered favourably.

Eventual or actual fluency in French is required.

The successful applicant will be required to participate in teaching at both the graduate and undergraduate level and to establish a research program in his/her own specialization.

*Applicants should submit curriculum vitae together with a statement of research interest, a brief description of their future research program, and the names of three references. All material should be sent to:*

**Jacques Leonard, Chairman**  
Department of Chemistry  
Université Laval  
Quebec, Quebec, Canada G1K 7P4

### FACULTY POSITION IN ROOT BIOLOGY

A position of assistant professor of biology at Harvard University is available with research opportunities at the Arnold Arboretum and some teaching obligations at the Department of Biology.

The Arnold Arboretum has excellent modern greenhouse facilities, sited among its living collections, with good control of temperature and water, low temperature facilities, two small laboratories, and adjacent field plots and saran houses.

The person should be a vascular plant physiologist, with background training in plant growth and development, and with special interest in woody plants, their propagation, multiplication, growth, and development. The desired field of research may be root physiology, hormonal physiology, or possibly seed dormancy and germination.

We hope that the person would have the breadth of vision to bridge the gap between pure and applied forestry and/or horticulture. As a particular instance, tropical silviculture is still immensely hampered by the lack of effective propagation techniques for hardwood species.

Application should, by 1 June 1980, be made to:

**Martin H. Zimmermann, Chairman**  
Root Biology Search Committee  
Harvard Forest  
Petersham, Massachusetts 01366

**FACULTY POSITIONS.** The Department of Microbiology of the University of Tennessee Center for the Health Sciences, seeks candidates for tenure-track positions in immunology and microbial physiology/genetics. Successful applicants will be expected to initiate and maintain strong independent research programs and to engage in teaching activities of the department. Academic rank and salary depend upon experience and qualifications. Send applications, including résumé, statement of teaching and research interests, and names of three references, to: **Dr. Bob A. Freeman, Chairman, Department of Microbiology, University of Tennessee Center for the Health Sciences, Memphis, Tenn. 38163. An Equal Opportunity/Affirmative Action Employer.**

### OTOLARYNGOLOGY ASSISTANT AND/OR ASSOCIATE PROFESSOR AND RESEARCH DIRECTOR

Involves research, teaching, and may have patient contact. Requires vestibular research interests, Ph.D. in mechanical engineering with biosystems emphasis, teaching experience, and familiarity with both peripheral and central mechanisms of the vestibular system. Contact: **B. F. McCabe, M.D., Department of Otolaryngology and Maxillofacial Surgery, University of Iowa, Iowa City, Iowa 52242. The University of Iowa is an Equal Opportunity/Affirmative Action Employer.**

### RESEARCH MICROBIOLOGIST

Involves research and may involve teaching and patient contact. Requires Ph.D. in microbiology with emphasis in tumor immunology. Salary commensurate with experience. Contact: **B. F. McCabe, M.D., Department of Otolaryngology and Maxillofacial Surgery, University of Iowa, Iowa City, Iowa 52242. The University of Iowa is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### FACULTY POSITIONS

The College of Veterinary Medicine of the University of Florida is seeking applications and/or nominations for several faculty positions. Detailed position descriptions are available upon request.

**CHIEF OF LARGE ANIMAL SURGICAL SERVICES,** Department of Surgical Sciences, application deadline is 15 May 1980.

**HISTOLOGIST,** Department of Metabolism, application deadline is 15 May 1980.

**ONCOLOGIST,** Department of Medical Sciences, application deadline is 15 May 1980.

Letters of application or nomination should include curriculum vitae outlining citizenship, academic training, teaching and practice experience, present professional activities, and Board-certification. Also needed are a list of publications, a statement of professional goals, and the names of three persons who can provide letters of reference. Salary will be commensurate with training, experience, and the academic rank of the successful qualified applicant. Correspondence should be addressed to:

**Dr. E. L. Besch, Associate Dean**  
College of Veterinary Medicine  
Box J-125, JHMHC  
University of Florida  
Gainesville, Florida 32610

### FACULTY POSITION IN PHYSIOLOGY

The University of California, Los Angeles, Department of Physiology, invites applications for a faculty position in the area of gastrointestinal physiology. The candidate must be unquestionably of world leadership caliber, with research that is pioneering rather than traditional. The requirements would best be served by a thorough knowledge of both physiology and chemistry. As research orientation the area of the structure and function of the peptides that are found in the nerves and in the endocrine cells of the gut would be in order. The appointee would be expected to be an innovative teacher, not necessarily limited to his/her field of research specialization.

If you are interested in this position, please send your letter of application and résumé to:

**Dr. Morton I. Grossman**  
Center for Ulcer Research and Education  
Building 115, Room 115  
VA Wadsworth Hospital Center  
Los Angeles, Calif. 90073

*The University of California is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are encouraged to apply.*

**NEUROPHYSIOLOGIST.** The Yerkes Primate Center invites applications for a research position in the Division of Neurobiology at the assistant or associate research professor level with the opportunity for an adjunct appointment in a university academic department. Ph.D. required; postdoctoral experience expected; good overall background in neurosciences desirable. The successful applicant is expected to conduct independent neurophysiologic research on the motor and/or somatosensory system of primates. Ample opportunity for collaborative work. The center is devoted to research in neurobiology, behavior, reproductive biology and pathology in a wide variety of primates, including the great apes. Some basic support is provided; however, researchers are expected to acquire grant support for their projects. Qualified applicants should send a description of future research goals, relevant reprints, curriculum vitae, and names of three references to:

**Johannes Tigges, Ph.D.**  
Chief, Division of Neurobiology  
Yerkes Regional Primate Research Center  
Emory University  
Atlanta, Georgia 30322

Application deadline is 15 May 1980.

*Affirmative Action/Equal Opportunity Employer*

### POSTDOCTORAL POSITION IN DEVELOPMENTAL BIOLOGY

Available April 1980; starting date flexible. Salary: \$1133 per month, plus fringe benefits. To identify and characterize cell surface molecules important in processes such as adhesivity, cell sorting or myoblast fusion in *Drosophila*. Strong background in biochemistry of membrane proteins, and experience in measuring cell adhesion or myoblast fusion required. Send your curriculum vitae, plus names, addresses, and telephone numbers of three references, to: **Dr. Clifton A. Poodry, Thimann Laboratories, University of California, Santa Cruz, Calif. 95064. Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### FACULTY POSITIONS DEVELOPMENTAL AND CELL BIOLOGY UNIVERSITY OF CALIFORNIA, IRVINE

The Department of Developmental and Cell Biology anticipates having two faculty positions available beginning as soon as the 1980/1981 academic year. Both positions are expected to be at the assistant professor level, though highly qualified associate professor level candidates may be considered. Responsibilities include normal undergraduate and graduate teaching, as well as potential for a high quality research program. At least 2 years of postdoctoral experience is desired.

**CELL BIOLOGIST/GENETICIST**—Preference for a person working on plant cells in one of the following areas: genetics of cultured cells, either somatic cell genetics or molecular genetics; cell morphogenesis stressing microtubules and microfilaments.

**DROSOPHILA DEVELOPMENTAL GENETICIST**—This position is for a person studying the genetic aspects of pattern formation and/or cell-cell interactions. An individual is being sought who approaches questions of pattern formation and differentiation using *Drosophila* as the primary organism.

Please send curriculum vitae, statement of research objectives, and reprints, and have three letters of recommendations sent to:

**Michael W. Berns, Chair**  
Developmental and Cell Biology  
University of California  
Irvine, Calif. 92717

*Apply immediately. The University of California is an Affirmative Action Employer.*

## PHARMACOLOGY

The Department of Pharmacology and Experimental Therapeutics of the Boston University School of Medicine has a regular faculty position open (assistant or associate professor) for an individual with a Ph.D. in pharmacology with additional training and interest in toxicology.

Position involves teaching in both medical and graduate school courses. Rank and salary to be negotiated. Candidates should submit curriculum vitae, bibliography, and three letters of reference by 30 April 1980 to: **Dr. Joseph Cochran, Search Committee Chairman, Department of Pharmacology and Experimental Therapeutics, Boston University School of Medicine, Boston, Mass. 02118. An Equal Opportunity Employer.**

### VISITING PHYSICS INSTRUCTOR

One-year appointment for the 1980-1981 academic year starting 1 September 1980. Teaching physics in engineering technology associate degree programs. Minimum qualifications: (i) bachelor's degree in physics or related area and minimum of 2 years of related employment, or (ii) master's degree in physics or related area. Salary commensurate with qualifications. Application deadline: 18 April 1980. Submit résumé to: **Professor Joseph Takacs, Search Committee Chairman, The University of Akron, Community and Technical College, Akron, Ohio 44325. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION**—Available immediately to Ph.D. in biochemistry or physiology for research on the metabolism of rat adipose tissue, emphasis on actions of insulin on mitochondrial functions. Send curriculum vitae and two references to: **Dr. R. L. Jungas, Department of Physiology, University of Connecticut Health Center, Farmington, Conn. 06032.**

*An Equal Opportunity Employer*

**POSTDOCTORAL POSITION** available immediately involving immunoelectron microscopy. Applicant should be experienced in transmission electron microscopy and immunohistochemistry. Salary range to \$15,000 per year. Send curriculum vitae to: **Dr. Randal Morris, Department of Microbiology, University of Cincinnati, Cincinnati, Ohio 45267. The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### DIETETICS AND NUTRITION POSITION DEPARTMENT OF BIOCHEMISTRY Memorial University of Newfoundland

The Biochemistry Department of Memorial University has a faculty position open (lecturer or assistant professor, depending upon qualifications) subject to approval by the Board of Regents, in its food and nutrition programme effective 1 July 1980. The duties will include teaching a full year course in introductory foods and the development and subsequent direction of a dietetic internship programme. Qualifications: degree in nutrition/dietetics and eligibility for or membership in the Newfoundland and Canadian Dietetic Associations. Preference will be given to applicants with an advanced degree in nutrition, food, institutional management, or education. The successful applicant will have at least 5 years of experience in responsible therapeutic nutrition and administrative positions as a staff member of an organization with an approved internship in therapeutic nutrition or hospital nutrition and food service administration or 3 years in therapeutic nutrition and/or administrative positions and 2 years teaching experience in nutrition, foods, and institutional management at the university level. Applications are to be submitted by 1 May 1980, with curriculum vitae and the names of three referees to: Dr. S. Mookerjee, Head, Department of Biochemistry, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3X9.

### FOOD PROCESS SCIENTIST LECTURER OR ASSISTANT PROFESSOR DEPARTMENT OF BIOCHEMISTRY MEMORIAL UNIVERSITY OF NEWFOUNDLAND

Individual with formal training in food processing required to teach courses in food process engineering and develop an independent research program in the area of biochemical engineering as related to food processing and/or food plant resource and waste management. Ph.D. or equivalent documented excellence in food engineering and food process science required. Salary and position dependent on qualifications of applicant. Position is available effective 1 July 1980, subject to approval by the Board of Regents. Send résumé, official transcripts, and names of three references before 1 May 1980 to: Dr. S. Mookerjee, Department of Biochemistry, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3X9.

**PLANT ECOLOGY POSTDOCTORAL** available immediately for botanist trained in physiological ecology or environmental physiology. Research objectives will be to determine kinetics of inorganic nitrogen uptake, nitrogen allocation patterns, and construct verified nitrogen budgets of  $C_4$  grasses to be integrated into a model of grazing ecology in tropical grasslands. Salary approximately \$12,500 with continuation beyond 1 year by mutual agreement. Send curriculum vitae and have letters of reference sent to: Professor S. J. McNaughton, Biological Research Laboratories, 130 College Place, Syracuse, N.Y. 13210. Syracuse University is an Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION IN IMMUNOLOGY

Position available for Ph.D. or M.D. with outstanding qualifications, who is interested in studying the cell biology of mononuclear phagocytes. Emphasis will be placed on macrophage-tumor cell interactions and on the regulation of macrophage differentiation. Previous experience with macrophages, cell biology, or biochemistry desirable. Opportunity offers advanced training in a progressive laboratory in an attractive university setting. Please send curriculum vitae and the names of three referees to:

D. O. Adams, M.D., Ph.D.  
Departments of Pathology and Immunology  
Duke University Medical Center  
Durham, N.C. 27710

Duke University is an Equal Opportunity Employer.

The University of California, Irvine, College of Medicine, offers a **POSTDOCTORAL POSITION IN NEUROPHYSIOLOGY** of evoked potentials beginning July through 1 September 1980. Experience in auditory and/or somatosensory physiology in experimental animals required. Projects to be investigated are the neural mechanisms of evoked potentials. Deadline for receipt of applications is 2 May 1980. Send curriculum vitae and request three referees to send letters of reference to: Arnold Starr, Department of Neurology, University of California, Irvine, Calif. 92717. Affirmative Action Employer.

## PULMONARY IMMEDIATE HYPERSENSITIVITY SR. PRINCIPAL SCIENTIST

Boehringer Ingelheim Ltd., continuing expansion of pharmaceutical research facilities at our new corporate complex in Connecticut, is seeking an astute scientist to lead a research team in pharmacology.

The position requires a related PhD with 1-3 years industrial and/or post doctoral experience in the broad area of atopic disease. Responsibilities will also include pulmonary evaluation of non-pulmonary agents which are in development.

Competitive wages and benefits, outstanding work environment and collaborators, as well as excellent area quality of life create a unique opportunity for contribution and reward. Interested persons should forward detailed CV to:

W.G. Kuchta  
Research and Development



**Boehringer  
Ingelheim**

90 E. Ridge, P.O. Box 368  
Ridgefield, CT 06877

An Equal Opportunity Employer M/F

## CANCER EXPERT

The National Institutes of Health, Public Health Service, Division of Cancer Treatment (DCT), National Cancer Institute, is seeking applicants for an "Expert Position" to develop and manage certain aspects of a contract program devoted to the acquisition, production, biological and toxicologic evaluation, and formulation of Biological Response Modifiers (BRMs) as new potential anti-tumor agents. BRMs refer to agents which will modify the relationship between tumor and host by modifying a host's biological response to tumor cells with resultant therapeutic benefit. Agents which may be considered for inclusion in the DCT's BRMs program include: (a) agents which augment antitumor immunity, modulate components of the immune response, and induce or restore effectors of immunity; (b) interferons and cytokine products; (c) thymic hormones or fucose; (d) tumor-specific vaccines and immune effectors in the form of cells or antibodies; (e) agents which interfere with carcinogenesis; and (f) agents which modify tumor cologenicity and/or the maturation of tumor or stem cells. In addition to involvement in all preclinical aspects of the development of BRMs, the applicant will be expected to work closely with the director of the BRMs program in the further development of these agents through clinical trials and into general medical practice.

Applicants must have an M.D. degree or Ph.D. or equivalent training and experience in experimental immunology, cell biology, and the use of animal model systems. Supervisory and managerial experience is desirable.

The position of "Expert" has a duration of 2 years with the possibility of being extended for an additional period, with responsibilities and pay equivalent to that of a Section Head. The salary range will be \$29,375 to \$40,000, depending on expertise and experience of the individual selected for the position.

Interested persons should respond, enclosing a completed curriculum vitae, to: Dr. Vincent T. Oliverio, Associate Director, Developmental Therapeutics Program, DCT, NCI, Blair Building, Room 5A03, 8300 Colesville Road, Silver Spring, MD 20910. It would be appreciated if persons active in this field of research, and who know individuals who may be qualified, interested, and available, would transmit this notice appropriately. An Equal Opportunity Employer.

**NATIONAL INSTITUTES OF HEALTH**

## POSITIONS OPEN

**PLANT PATHOLOGIST.** The Department of Plant Pathology at the University of Illinois, Urbana, seeks a plant pathologist (teaching, 30 percent; research, 70 percent). A Ph.D. is required. A good background in genetics would be a helpful qualification for the post. The person would be expected to do research in the pathology of corn and to cooperate with agronomists and plant breeders.

Corn is a major crop in Illinois so that there is strong support available for research in its diseases. Prior experience would be helpful but not necessary. Preference will be given to filling the position at the assistant professorial level, but an appointment at the associate professorial level will also be considered. The salary would be commensurate with the applicant's experience and qualifications. This is a tenure-track position.

The application deadline is 1 May 1980. The starting date is 21 August 1980.

Applications will be sent on request and further correspondence should be sent to: **Dr. R. E. Ford, Department of Plant Pathology, Room N-519 Turner Hall, University of Illinois, Urbana, Illinois 61801.**

*The University of Illinois is an Equal Opportunity Employer.*

### POSSIBLE LEAVE REPLACEMENT Middlebury College

Possible one-year position as visiting instructor or visiting assistant professor of biology, effective 1 September 1980 through 31 August 1981. Responsibilities would include an upper-level lecture/laboratory course in cellular biology during the fall term, a seminar, lecture, or laboratory course in an area of choice during the short winter term, an introductory lecture/laboratory course in developmental biology, and contribution to an introductory lecture/laboratory course in cellular biology during the spring, and direction of some undergraduate research projects. **Availability of the position should be known by the end of April. In order to be considered a candidate, an interested person should submit the following materials by 25 April:** current curriculum vitae, a statement of developing teaching and research interests, all graduate and undergraduate transcripts, and a list of at least three references. All application materials and questions should be addressed to: **Christopher Watters, Ph.D., Chairman, Department of Biology, Middlebury College, Middlebury, Vermont 05753; telephone: 802-388-2802. Middlebury College is an Equal Opportunity Employer.**

**POSTDOCTORAL FELLOWS IN PHARMACOLOGY AND ASSISTANT RESEARCH PHARMACOLOGIST.** Positions are available for **POSTDOCTORAL FELLOWS** in cardiovascular pharmacology. Successful applicants may have had previous experience in either the physiology or pharmacology of the circulation and its nervous control. Training will emphasize the analytical approach to the vascular neuroeffector mechanism in healthy animals and models of hypertension. Particular emphasis will be placed on the cerebral vasculature. There is an additional opening for a **BASIC SCIENTIST** with postdoctoral experience in cardiovascular biophysics, ideally with training in quantitative stereology. The successful candidate will be expected to pursue independent research and to assist other members of the department in morphological studies of the vascular neuroeffector mechanism utilizing computer modeling techniques. Reply to: **Dr. John Bevan, Department of Pharmacology, University of California, Los Angeles, Center for Health Sciences, Los Angeles, Calif. 90024. An Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available. Studies of (Na + K)-ATPase. Work involves chemical modification, biophysical measurements (fluorescence probes) and rapid reactions. Salary: \$13,000 for 1 year with possibility of renewal. Send curriculum vitae, publications, and names of three references to: **Dr. Marcia S. Flashner, Department of Pharmacology, State University of New York, Upstate Medical Center, Syracuse, N.Y. 13210. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION.** Available 1 July 1980, for a biochemist/organic chemist to purify and determine mechanism of action of mutagenesis inhibitors in food (see *Cancer Letters* 7, 63, 1979). Experience with drug metabolizing enzymes highly desirable. Send curriculum vitae and three letters of recommendation to: **Dr. M. W. Pariza, Department of Food Microbiology and Toxicology, Food Research Institute, University of Wisconsin, 1925 Willow Drive, Madison, Wisc. 53706. The University of Wisconsin-Madison is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS** in the area of biochemistry in genetics of bacterial production of exopolysaccharides and metabolism of chlorinated hydrocarbons. Persons with experience in purification and characterization of enzymes involved in carbohydrate metabolism, fractionation of glycoproteins or characterization of chlorinated compounds by thin layer chromatography, GC-MS, and so forth, are desirable. Knowledge in the isolation, electron microscopy, and heteroduplex analysis of plasmid DNA's will be helpful. Address inquiries to: **A. M. Chakrabarty, SBMS Microbiology/Immunology, E-703 CMMSA, University of Illinois Medical Center, P.O. Box 6998, Chicago, Ill. 60608.**

**POSTDOCTORAL POSITION** available late summer for study of atmospheric aerosol loading to large lakes and the ocean; especially trace metal loading (including aerosol data base analysis and interpretation experience). Background in atmospheric chemistry, aerosol physics and/or micrometeorology. Salary: \$16,000 minimum. Send curriculum vitae and names and addresses of three references to: **Dr. H. Sievering, Environmental and Occupational Health Sciences Program, School of Public Health, University of Illinois, Box 6998, Chicago, Ill. 60680. Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available immediately for NIH-supported project on the regulation of gene expression in avian sebaceous glands. Background in biochemistry or molecular biology is desirable. Salary will be in accordance with NIH guidelines. Send curriculum vitae and names of three references to: **Dr. A. G. Goodridge, Department of Pharmacology, Case Western Reserve University, Cleveland, Ohio 44106.**

**POSTDOCTORAL POSITION.** Chemical carcinogenesis; metabolism and mechanism of action of nitrosamines carcinogenic for urinary bladder. Project involves radiochemical syntheses, in vivo and in vitro metabolism DNA alkylation. Salary competitive; position available immediately. Send résumé, transcripts, and references to: **Dr. Charles C. Irving, Department of Urology, University of Tennessee, Coleman Building, Room 2H13, 956 Court Avenue, Memphis, Tennessee 38105. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION IN ENDOCRINOLOGY** beginning summer 1980. Research in field of steroid hormone action and steroid receptors. Ph.D. or M.D. with background in biochemistry preferred. Send curriculum vitae and references to: **Dr. David Feldman, Division of Endocrinology, Stanford University School of Medicine, Stanford, Calif. 94305.**

### POSTDOCTORAL POSITION IN PHYSIOLOGY

The position available is for research in the area of membrane physiology in excitable tissues. The candidate should have a strong theoretical and experimental background in biophysical approaches to membrane biology, and an interest in the developmental aspect of excitability. The ideal candidate would have excellent theoretical skills and show great promise experimentally.

If you are interested in this position, please send your curriculum vitae and references to:

**Dr. Wilfried F. H. M. Mommaerts  
Chairman, Department of Physiology  
University of California  
School of Medicine  
Los Angeles, California 90024**

*Affirmative Action/Equal Opportunity Employer.  
Minority and women candidates are encouraged to apply.*

**POSTDOCTORAL POSITION** available immediately. To work on protein sequence of membrane proteins. Candidates should have prior experience. Please send résumé and three letters of recommendation to: **K. T. Yasunobu, Department of Biochemistry-Biophysics, University of Hawaii, Honolulu, Hawaii 96822. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available immediately to study molecular mechanism of translational regulation by bacteriophage T4, especially gene *regA* (*J. Virol.* 32, 905, 1979). Background in microbial genetics, protein purification, immunology, or in vitro translation desirable. Salary: \$13,000 to \$15,000. Send résumé plus names of three references to: **Dr. John Wiberg, Department of Radiation Biology and Biophysics, University of Rochester School of Medicine, Rochester, N.Y. 14642. Telephone: 716-275-3841. Equal Opportunity Employer.**

## POSITIONS OPEN

### POSTDOCTORAL POSITIONS

Two research associate positions will be available in the laboratory of Dr. Behrus Jahan-Parwar beginning immediately to study behavioral neurobiology (feeding and locomotion) in *Aplysia*. Experience with intracellular and extracellular recording techniques is required, with interests in sensory integration, motor systems, computer analysis of neural signals, and biophysics helpful. Send curriculum vitae, synopsis of Ph.D. thesis or reprints, statement of research interests, and three letters of recommendation to: **Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Mass. 01545.**

*An Equal Opportunity/Affirmative Action Employer*

**POSTDOCTORAL POSITION** available immediately to study mutants of mammalian cells, regulation of purine metabolism, and gene isolation using recombinant DNA technology. Experience in these areas or related areas preferred. Position available for 2 years. Salary based on prior training and expertise. Send curriculum vitae and names of three referees to: **Dr. Milton Taylor, Department of Biology, Indiana University, Bloomington, Ind. 47405.**

**POSTDOCTORAL RESEARCH ASSOCIATE** position available for EM study of mammalian muscle spindles. Experience desired in skeletal muscle ultrastructure. Salary dependent upon qualifications. Send résumé and names of three references to: **Dr. Jan Kucera, Neurology Department, Boston University School of Medicine, 750 Harrison Avenue, Boston, Mass. 02118.**

Two positions at the **Postdoctoral-Research Associate** level are presently available in the Laboratories of Connective Tissue Research of the **Department of Biochemistry, Baylor College of Medicine, Houston, Texas 77030**, for the study of macromolecular components of cell membranes. Ph.D. degree in biochemistry or cell biology and expertise in the field of glycoproteins or proteoglycans are required. Annual salary: \$12,000 to \$14,000, depending on qualifications and previous experience. Send curriculum vitae and two letters of reference to: **Dr. Nicola Di Ferrante. An Equal Opportunity Employer.**

### POSTDOCTORAL RESEARCH ASSOCIATES

Applications invited from persons with backgrounds in:

- 1) Chemistry, molecular biology, or biophysics. Areas of interest include: (i) molecular mechanisms of mutagenesis, (ii) alteration of gene expression by carcinogens, and (iii) physical interactions between carcinogens and DNA. Apply to: **Dr. Thomas Meehan.**
- 2) Cell biology, biochemistry, or carbohydrate chemistry. Areas of interest include: (a) surface mucopolysaccharides of normal and transformed cells, (b) analysis of cell surface properties by flow cytometry, and (c) early detection of chemical transformation. Apply to: **Dr. Susan P. Hawkes.**

Send curriculum vitae and two or more letters of recommendation to: **Michigan Molecular Institute, 1910 West St. Andrews Road, Midland, Michigan 48640. Michigan Molecular Institute is an Equal Opportunity Institute.**

**POSTDOCTORAL RESEARCH ASSOCIATE.** Study of the effect of antioxidants on the metabolism of benzopyrene and its derivatives. Background in EPR spectroscopy, HPLC techniques, and microbiological methods including the Ames test. Starting salary: \$12,500 per annum; position available immediately. Send résumé and two letters of reference to: **Dr. P. D. Sullivan, Department of Chemistry, Ohio University, Athens, Ohio 45701. An Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL RESEARCH IN METEOROLOGY

Research combining statistical and dynamical methods of numerical weather prediction. Applicants should have the Ph.D. degree in meteorology and experience with computer modeling of large-scale atmospheric flows. Please reply before 15 May 1980 to:

**Dr. Alan J. Fallor  
Institute for Physical Science and Technology  
University of Maryland  
College Park, Md. 20742**

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



## POSITIONS OPEN

### POSTDOCTORAL RESEARCH ASSOCIATE

Position available immediately for Ph.D. biochemist, physiologist, or nutritional biochemist. Research in lipid metabolism. Purification, characterization, cell localization, and regulation of various lipolytic enzymes. Cell-lipoprotein interactions. Salary commensurate with experience. Submit résumé plus names of three references to: Dr. André Bensadoun, Nutritional Biochemistry, 242 Savage Hall, Cornell University, Ithaca, New York 14853.

Cornell University is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH ASSOCIATES.** Two positions available for immediate appointment in the areas of: (i) cardiac metabolism in endotoxic shock and diabetes, and (ii) hepatic glycolytic regulation in endotoxic shock. \$12,500 per year. Send curriculum vitae to: Dr. Maw-Shung Liu, Department of Physiology and Pharmacology, Bowman Gray School of Medicine, Winston-Salem, N.C. 27103. Equal Opportunity Employer.

### POSTGRADUATE RESEARCH ENTOMOLOGIST

Postgraduate research entomologist to develop a program of research and to conduct studies on host finding mechanisms in mosquitoes and other public health insects in laboratory and field. To study as a member of a team the role of plant kairomones, auto- and transspecific regulating factors influencing mosquito behavior as related to oviposition, hematology and activity patterns. Must have Ph.D. in entomology, biology, or related fields with interest in medical entomology. The position is available immediately. Forward résumé, three letters of recommendation, and transcripts of college course work to: Dr. M. S. Mulla, Department of Entomology, University of California, Riverside, California 92521.

### Memorial University of Newfoundland POSTDOCTORAL RESEARCH FELLOW

With good background in biochemistry or chemistry, to join a project on structural aspects of collagen biosynthesis, beginning 1 July 1980. Experience in synthesis and structure of peptides and/or isolation and structure of enzymes desirable. Salary around \$14,000 for 1 year, with possibility of renewal. Send biobdata and names of referees to: Dr. V. S. Ananthanarayanan, Biochemistry Department, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3X9.

**POSTDOCTORAL RESEARCH POSITION (Ph.D.).** Position is available in the following areas: neuroanatomy and neurophysiology of the limbic system and aggressive behavior; axonal transport (metabolism of catecholamines, nerve regeneration); EM analysis of experimental neuropathology/myelin pathology; neuroanatomic and neurophysiologic analysis of psychosomatic disease. Individual required to participate in neurosciences teaching programs. Position is available for an initial period of 1 year with the possibility of an additional year. Salary negotiable. Send inquiries, curriculum vitae, and three letters of recommendation to: Dr. Allan Siegel, Department of Neurosciences, COLLEGE OF MEDICINE AND DENTISTRY OF NEW JERSEY—New Jersey Medical School, 100 Bergen Street, Newark, N.J. 07103. An Equal Opportunity/Affirmative Action Employer, M/F.

## RESEARCH ASSOCIATE

Opening for a biochemist or microbiologist to join a team of investigators studying pyridine biosynthesis in bacteria. Opportunity to learn advanced instrumentation techniques in a medical school environment. Two-year employment. Salary negotiable. Interested applicants should send curriculum vitae and names of three references to:

Box 81, SCIENCE

Equal Opportunity/Affirmative Action Employer

**COLUMBIA UNIVERSITY, College of Physicians and Surgeons, Department of Medicine.** A position is available at the RESEARCH ASSOCIATE level to assist in setting up and managing a new laboratory. Applicant is expected to have a Ph.D. degree and experience in amino acid analysis. Send correspondence to: Dr. Philip Felg, Chairman Designate, Department of Medicine, Columbia University, 630 West 168 Street, New York, N.Y. 10032. An Affirmative Action/Equal Opportunity Employer.

4 APRIL 1980



### UNIVERSITY OF RIYADH • COLLEGE OF MEDICINE SAUDI ARABIA

Applications are invited from qualified men and women holders of M.R.C.P., F.R.C.S., M.R.C.O.G., M.R.C.Path., American Board and Canadian Fellowship to fill posts as Professors, Associate Professors, Assistant Professors, in the Pre-clinical and Clinical Subjects and Related Studies as indicated below for the academic year 1980/1981. Applicants should have teaching experience at university level, and Demonstrators should be holders of B.S./M.B.B.S. plus one year experience; Lecturers holders of M.B.B.S. and one year experience with M.S. and Diploma:

Anatomy	Professor, Assistant Professors, Demonstrators
Physiology	Professor, Assistant Professors, Demonstrators
Biochemistry	Professors, Assistant Professors, Lecturers, Demonstrators
Pharmacology	Associate Professors, Assistant Professors, Lecturers, Demonstrators
Pathology	Professor, Associate Professors, Assistant Professors, Lecturer, Demonstrator
Microbiology	Associate Professor, Assistant Professors
Obstet. & Gynecol.	Professor, Associate Professor, Assistant Professors, Demonstrators
Community Medicine	Associate Professors, Assistant Professor
Forensic Medicine	Assistant Professor
E.N.T.	Professor, Assistant Professors
Ophthalmology	Assistant Professor
Surgery	Professors, Assistant Professor
Medicine	Professor, Associate Professors, Assistant Professors, Demonstrators
Anaesthesia	Associate Professor, Assistant Professor
Pediatrics	Demonstrators

Attractive and negotiable salaries are offered in accordance with the years of experience.

Clinical allowance: For those engaged in clinical care of patients in hospital there is an allowance at the rate of 80% of the basic salary. For medically qualified staff not engaged in clinical care of patients there is a professional allowance at the rate of 30% of the basic salary.

Appointments are normally for one year and renewable.

Medium of instruction is English.

Free furnished accommodations are offered. Gratuity offered at end of contract, local transportation allowance and annual leave with airfare for up to 4 family members are paid. There is no income tax in Saudi Arabia and money is freely convertible and transferable.

Associate Professor and Assistant Professor are equivalent to Senior Lecturer and Lecturer respectively in U.K.

Application with a comprehensive curriculum vitae and addresses of two references to be sent to:

Dr. Hassan Kamel  
Dean, College of Medicine  
P.O. Box 2925  
Riyadh, Saudi Arabia

At the same time 4 copies of application and curriculum vitae with names and addresses of references to be sent to:

For U.K. and others	For States	For Canada
Dr. A. T. C. Johnston	Mrs. Jeri Dowhan	Mr. Essam Shaikh
London School of Hygiene and Tropical Medicine	Saudi Arabian Educational Mission	Saudi Arabian Mission
Keppel Street	2223 West Loop South	Suite 1144-99 Bank St.
London WC1E 7HT	Houston, Texas USA 77027	Ottawa, Ontario K1P 6B9
Phone: 01-636-8636	Phone: 713-871-9404	Phone: 613-237-3550

Deadline for applications is first week of April. Interviews will be held during second and third weeks of April, 1980.

## POSITIONS OPEN

### DEAN

#### School of Pharmacy University of Connecticut, Storrs

Applications and nominations are invited for the position of dean, School of Pharmacy at the University of Connecticut, Storrs. The position will be available on or about 1 September 1980.

Candidates must have earned a Ph.D. in a pharmaceutical discipline and must possess a record of scholarly achievements or evidence of creative contributions sufficient to qualify them for tenured rank in a university faculty.

Desirable qualifications include: an undergraduate degree in pharmacy, experience with teaching and curriculum development at the undergraduate and graduate levels, demonstrated research development, administrative experience and the ability to relate to pharmacy practitioners. Complete applications including all available supporting material must be received by 1 May 1980.

Contact: JANICE E. HAYES, Ph.D.  
Chairperson, Search Committee  
Vice President's Office

#### UNIVERSITY OF CONNECTICUT HEALTH CENTER

Farmington, Conn. 06032

An Equal Opportunity Employer

#### PROGRAM DIRECTOR RESOURCE CENTERS FOR SCIENCE AND ENGINEERING (\$34,712 to \$51,112 per annum)

The National Science Foundation, Division of Science Education and Resources Improvement, is seeking qualified candidates for a 2-year (1 year will be considered) rotational appointment for program director. The program is designed to promote increased participation in science and engineering by minorities and persons from low-income families, and are geographically dispersed and programmed to carry out a variety of regional activities at all education and community levels. Responsibilities include directing program activities and for the conception and initiation of a range of activities, strategies, and organizational structures for addressing the concerns and needs of minorities in science and engineering. Salary is negotiable based on qualifications and experience within the salary range above. Position is exempted from the competitive civil service. Health, life insurance, and leave benefits are available. Candidate should have a Ph.D. or its equivalent in physical, engineering, biological, or social science, broad experience in science, especially as a teacher or administrator, and be familiar through experience with barriers inhibiting minority entry into the sciences. Send résumé to: National Science Foundation, DPM, Room 212, EMPB 80-28, 1800 G Street, NW, Washington, D.C. 20550 by 30 April 1980. For further information, telephone: Catherine Hobek at 202-632-4124.

An Equal Opportunity Employer

**RESEARCH ASSOCIATE**—Postdoctoral position to investigate physiological and biochemical properties associated with fungal sporulation and spore germination. July 1980. Research will focus on the recently discovered "storage" protein present in dormant spores of *Botryodiplodia theobromae*. Experiments to be conducted will: (i) determine the cellular location of the protein in the spore, (ii) determine when the protein is synthesized during sporulation, (iii) monitor the fate of the protein during germination, (iv) isolate the messenger RNA of the protein, and (v) examine the gene responsible for its syntheses. Should be familiar with basic microbiological and biochemical techniques such as sucrose density gradient centrifugation, polyacrylamide gel electrophoresis, column chromatography, electron microscopy, and use of radioisotopes. Salary commensurate with qualifications. Apply by 15 May to: Department of Plant Pathology, 406 Plant Sciences Building, The University of Nebraska-Lincoln, Lincoln, Nebraska 68583. Affirmative Action/Equal Opportunity Employer.

## POSITIONS OPEN

### QUANTITATIVE GENETICIST PLANT BREEDER

The Department of Botany and Plant Sciences, University of California, Riverside, announces a position at the assistant professor level, with both an Experiment Station and academic title, available 1 July 1980. The position is a tenure-track, 11-month appointment in the College of Natural and Agricultural Sciences and in the Agricultural Experiment Station. A Ph.D. is required; postdoctoral experience is preferred, but all qualified candidates will be considered. The appointee must have a strong background in quantitative genetics and a commitment to breeding programs in annual or tree crops important to California. Must be able to interact with plant physiologists, plant pathologists, entomologists, and so forth. The appointee is expected to teach a graduate-level course in advanced plant breeding and an upper division course (to be determined). Must be willing to serve as major professor to M.S. and Ph.D. students.

Send curriculum vitae and official transcripts, and arrange to have at least three letters of recommendation sent to: Dr. Giles Waines, Search Committee Chairman, Department of Botany and Plant Sciences, University of California, Riverside, Calif. 92521. Application deadline is 2 May 1980, or later if a suitable applicant has not been selected.

An Affirmative Action/Equal Opportunity Employer

University of North Carolina: **RESEARCH ASSISTANT** and/or **RESEARCH ASSOCIATE PROFESSOR** positions. Three positions for 1 to 3 years. Available 1 July 1980, in the Pharmacology Department of the University of North Carolina at Chapel Hill. These positions are for individuals interested in cancer chemotherapy and experienced in: (i) protein sequencing, NMR and ESR, and other physicochemical techniques, (ii) synthesizing folate, nucleoside and polynucleotide analogs, and (iii) the study of proteolytic enzymes. Applicants who have demonstrated research productivity will be given priority. Applicants should send curriculum vitae and names and addresses of three references, before 1 May, to: Dr. Yung-Chi Cheng, Department of Pharmacology, School of Medicine, 231H, University of North Carolina, Chapel Hill, N.C. 27514. An Equal Opportunity/Affirmative Action Employer.

### RESEARCH DEVELOPMENT AND RESEARCH ON EFFECTS OF ATMOSPHERIC DEPOSITION ON ECOSYSTEMS

This position is for a Ph.D. in a natural science who has a record of research support and publication on the effects of atmospheric deposition on ecosystems. A broad knowledge of the ecology and biogeochemistry of and relationships between terrestrial and freshwater ecosystems is required. This person is expected to identify, stimulate, and provide leadership in the development of new research programs, and integrate his or her activities into the ongoing programs in this field at the University of Maine at Orono (UMO). This person may teach one specialty course per year, and may guide graduate student research. Additionally, the position will involve partial administration of ongoing programs in this field at UMO. Departmental affiliation will be determined by the candidate's particular specialization. This is a 2- or 3-year appointment on an academic year (9-month) basis. We hope to fill this position by 1 July 1980. The salary is negotiable. The successful candidate may raise additional salary (2 1/2 months per year). Funds are available for travel, pilot research studies, and research development. Applicants should forward curriculum vitae, three letters of reference, transcripts (if the Ph.D. was received in the last 5 years), and one copy of publications related to the goals of this position. Applications close on 21 April 1980. Forward information to: Professor Stephan A. Norton, Department of Geological Sciences, University of Maine, Orono, Maine 04469.

**SENIOR SURGICAL ONCOLOGIST.** Applicants must be Board-certified in general surgery with a background as a senior surgical oncologist in an academic setting. A graduate degree or similar experience in immunology and/or pathology is highly desirable. Previous experience in developing, directing, and co-ordinating both clinical and basic research programs in oncology is essential. Submit complete curriculum vitae and letters of recommendation to: Arthur E. Baue, M.D., Chairman, Department of Surgery, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut 06511. Yale University is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

### PROGRAM MANAGER/ PRINCIPAL INVESTIGATOR

For a large multidisciplinary team involving inhalation carcinogenesis bioassay projects. Requires Ph.D. degree in toxicology, experience in program management, and publications in the field of toxicology. Experience in inhalation toxicology and/or aerosol physics desirable. Salary commensurate with qualifications and experience. Location in a multidisciplinary research laboratory in the Pacific Northwest, providing opportunities for interaction with a diverse group of biological and physical scientists.

Please submit résumés, academic record, and salary requirements to: E. P. Galbraith, BATTELLE-NORTHWEST, P.O. Box 999, Richland, Wash. 99352.

An Equal Opportunity Employer, M/F

**RESEARCH ASSOCIATE** position in parasitology available immediately to study the immunology, immunochemistry, and cell biology of experimental visceral leishmaniasis. The appointment will be made by Columbia University and the research will be conducted at the Institute of Microbiology, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil, as part of a collaborative program between the two institutions. Initial appointment for 1 year with a starting salary of \$20,000 per annum is renewable. Experience in immunology, cell biology, or biochemistry desirable. Send curriculum vitae and names of references to: Dr. P. A. D'Alessandro, Division of Tropical Medicine, College of Physicians and Surgeons, Columbia University, 630 West 168 Street, New York, N.Y. 10032. An Equal Opportunity/Affirmative Action Employer, M/F.

### RESEARCH ASSOCIATE

Position available for biochemist with a background in biochemical analysis of histocompatibility antigens. The position involves independent research in biochemical characterization of rat, class I and II major histocompatibility antigens. Position is immediately available for 2 years. Salary: \$19,000. Submit curriculum vitae and three references to: Dr. Peter Wettstein, The Wistar Institute, 36th and Spruce Streets, Philadelphia, Pa. 19104.

**RESEARCH ASSOCIATE/POSTDOCTORAL POSITION.** Temperature regulation and physiological ecology of native and domestic bees. Starting salary: \$12,000. Two-year position available 1 June 1980. Preference to applicants with experience in insect energetics and temperature regulation. Send two letters of recommendation and curriculum vitae to: Dr. William M. Schaffer, Department of Ecology and Evolutionary Biology, THE UNIVERSITY OF ARIZONA, Tucson, Arizona 85721. An Equal Opportunity/Affirmative Action Employer.

### SEDIMENTOLOGIST

The Department of Earth Sciences, Case Western Reserve University, has an opening for an individual to develop a teaching and research program in sedimentology. Field of specialization is open, but applicants should have experience broad enough to handle most instruction in sedimentology at both the graduate and undergraduate levels. Ample opportunities exist for research collaboration both within the Department of Earth Sciences and with faculty members in the School of Engineering.

Ph.D. or equivalent is required. Please submit applications, consisting of résumé, names of three references, and a statement of research and teaching interest to:

Samuel M. Savin  
Department of Earth Sciences  
Case Western Reserve University  
Cleveland, Ohio 44106

Case Western Reserve University is an Equal Opportunity/Affirmative Action Employer.

**TURFGRASS RESEARCH ASSOCIATE**—Western Washington Research and Extension Center (WWREC) seeks an M.S. or Ph.D. in agronomy, horticulture, or closely related area to conduct research on turfgrass management. Funding from grant sources, no termination date. Salary: \$14,000 to \$15,000 per year. Send résumé, transcripts, and names and addresses of three persons who have been asked to submit letters of reference by 1 May 1980 to: Dr. E. C. Bay, WWREC, Puyallup, Wash. 98371. An Equal Opportunity/Affirmative Action Employer. Women, minorities and handicapped persons are encouraged to apply and identify themselves as such in their applications.

## POSITIONS OPEN

### RESEARCH PROFESSOR DEPARTMENT OF MICROBIOLOGY UNIVERSITY OF GEORGIA

Applications and nominations are invited for the position of research professor of microbiology. Applicants must have an internationally recognized research program in microbial physiology or related area as evidenced by publications, grant support, and honors. Candidates must have substantial academic experience commensurate with the level of professor and must have the interest and drive to continue to vigorously pursue research. The successful candidate should actively interact with graduate students, postdoctorals, and faculty members to initiate and stimulate their research endeavors and to strengthen all efforts of the department. The Department of Microbiology belongs to the Biology Division of Franklin College of Arts and Sciences. Within the college and the division, integration of research and teaching is encouraged. This has led to truly interdepartmental research programs and it is expected that the successful candidate would be aligned with this approach. The position will be filled during the 1980-1981 academic year. Applications, containing curriculum vitae, list of publications, and names of references, should be postmarked no later than 1 June 1980, and should be addressed to: **Dr. Lars G. Ljungdahl, Chairman of Search Committee, Department of Biochemistry, University of Georgia, Athens, Georgia 30602.**

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

**SENIOR CLINICIAN INVESTIGATOR IN TRAUMA.** Applicants must be Board-certified in general surgery with a background as a senior academic surgeon with experience in establishing a clinical research center in the broad field of trauma in a teaching setting. A graduate degree in physiology or equivalent experience is desirable. Submit complete curriculum vitae and letters of recommendation to: **Arthur E. Baue, M.D., Chairman, Department of Surgery, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut 06511.** *Yale University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### RESEARCH ASSOCIATE

Postdoctoral research position for the study of the survival and photosynthetic efficiency of chloroplasts cultured in vitro. Applications will be accepted until 15 April or until a satisfactory candidate is selected. Address curriculum vitae and three letters of reference to: **Professor C. A. Rebeiz, Laboratory of Plant Pigment Biochemistry and Photobiology, University of Illinois, Urbana, Ill. 61801.**

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

### SCIENTIFIC DIRECTOR

Management services company seeks scientific executive to assist in trade association management. Background in scientific management, ability to deal with top-level business and government/regulatory leaders, excellent communication skills, imagination, and integrity required. Doctorate in toxicology, chemistry, or related sciences desirable.

We offer an attractive Atlanta location, growth environment, and competitive compensation, including profit sharing, bonus, and opportunity to build profit center.

Please forward complete résumé, including salary history, in strict confidence to: **Box 82, SCIENCE.**

### VIROLOGIST

Assistant professor to carry out research on molecular or genetic aspects of virology and teach general virology and aspects of pathogenic virology to veterinary and other health professional students.

Send résumé and the names of three references to: **Chairman, Department of Molecular Biology and Microbiology, Tufts University Schools of Medicine, Veterinary Medicine and Dental Medicine, 136 Harrison Avenue, Boston, Mass. 02111.**

*Tufts University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### RESEARCH ASSOCIATE

Ph.D. or equivalent with training in recombinant DNA techniques and nucleic acid biochemistry to work on research related to regulation of expression of genes in eukaryotic cells and eukaryotic cell differentiation primarily using erythropoietic cell models. Salary negotiable. Position available immediately. Send résumés to:

**Deputy Director for Administration  
Cancer Center/Institute of Cancer Research  
Columbia University  
701 West 168 Street  
New York, New York 10032**

*An Equal Opportunity/Affirmative Action Employer*

## CONFERENCE

### ICSFS-2

#### 2nd INTERNATIONAL CONFERENCE ON SOLID FILMS AND SURFACES

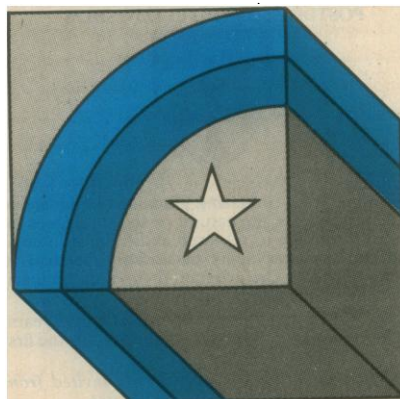
Cochairmen: **R. Ueda (Films)  
J. E. Rowe (Surface Electronics)  
R. L. Park (Surfaces)**

The 2nd International Conference on Solid Films and Surfaces will be held 8 to 11 June 1981 at the University of Maryland, College Park, Maryland. This conference addresses common areas of film and surface science through a format of plenary lectures of general interest and contributed papers on more specialized topics. Abstracts of contributed papers on surface electronics, films, and surface science will be accepted for consideration through 1 March 1981. Authors will be notified of acceptance or rejection within two weeks of receipt of their abstract. Manuscripts will be required at the time of the conference for publication in *Applications of Surface Science*. Abstracts and enquiries should be sent to: **2nd International Conference on Solid Films and Surfaces, Professor R. L. Park, Cochairman, Department of Physics and Astronomy, University of Maryland, College Park, Md. 20742.**

# Laboratory of Applied Studies Fellowships at NIH

The Laboratory of Applied Studies, Division of Computer Research and Technology of the National Institutes of Health is offering 2-3 year Research Associate positions to highly qualified physicians with backgrounds in physical science or engineering (including mathematics through differential equations), two years' experience in computer programming, and at least one year's clinical experience beyond the M.D. degree.

Under the supervision of a higher level medical investigator, the Associate will collaborate with clinicians in such areas as cardiology, hypertension, pulmonary, nuclear medicine, diagnostic radiology or medical intensive care. Projects include biosignal analysis, medical imaging, and modeling of pathophysiological processes.



The Associate will assist in data collection, investigation and computer implementation of models, and assessment of the clinical usefulness of results. Expert advice in applied

## An NIH Associate Program

*An Equal Opportunity Employer*

mathematics, computer systems analysis, electronic engineering, and statistics will be provided by the Laboratory staff.

Facilities on the 306-acre NIH campus in suburban Washington, D.C., include a 541-bed research and teaching hospital, more than 1,000 laboratories, and the National Library of Medicine. This position as a Staff Fellow has a salary range of \$25,000 to \$26,000, depending on qualifications. A variety of other benefits are applicable including moving and travel expenses.

For further information, contact:

**Dr. Eugene K. Harris  
Chief, Laboratory of Applied Studies  
Building 12A, Room 2041  
National Institutes of Health  
Public Health Service  
9000 Rockville Pike  
Bethesda, Maryland 20205**



## SYMPOSIUM

The American Malacological Union (AMU) will conduct its annual meeting in Louisville, Kentucky (Executive Inn), 19 to 25 July 1980. (Membership not required.)

In addition to regular sessions of papers on molluscan-related topics, the following events are scheduled: (A) Symposia on: (i) **Feeding Mechanisms in Predatory Mollusks**; A. J. Kohn, chairman; (ii) **Functional Morphology in Cephalopods**; C. F. E. Roper, chairman. (B) Field trips for freshwater (David Stansbery, leader), fossil and terrestrial mollusks. (C) Workshops on identification of marine, freshwater and terrestrial mollusks, organization of collections, underwater photography, and marine aquaria. (D) Cash award and certificate for best student paper. (E) Auction of books, papers, and prints on molluscan and natural history subjects.

Contact: Dr. C. F. E. Roper, President, AMU, Division of Mollusks, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.

## GRADUATE STUDY

The Department of Biology at the C. W. Post Center of Long Island University offers programs leading to the M.S. degree. Research experience and course work is available in botany and zoology with specialization in biochemistry, cell biology, electron microscopy, ecology, neurophysiology, genetics, and marine biology. Financial aid and graduate assistantships are available. Contact: Dr. Joseph Maturo, III, Department of Biology, C. W. Post Center/Long Island University, Greenvale, New York 11548.

## ASSISTANTSHIPS

**TEACHING ASSISTANTSHIPS** leading to Ph.D. degrees in analytical and clinical chemistry, structural analysis, and regulatory biology. M.S. degrees offered in biology and all areas of chemistry. Clinical chemistry and regulatory biology programs offered in conjunction with Cleveland Clinic Foundation, \$5,000 to \$5,700 plus remission of tuition and fees. Write: Dr. Thomas Flechtner, Department of Chemistry, or Dr. Randall Gee, Department of Biology, Cleveland State University, Cleveland, Ohio 44115.

**ASSISTANTSHIPS** in Ph.D. program available for a limited number of qualified graduate students. All students supported by teaching or research assistantships carrying 12-month stipends of \$5100 (plus tuition and dependency allowances). Active research programs in behavior, biochemistry, biophysics, cell biology, development, genetics, microbiology, molecular biology, neurophysiology, and physiological ecology. For further information, write: Director of Graduate Admissions, Department of Biology, Wesleyan University, Middletown, Conn. 06457.

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIPS IMMUNOBIOLOGY OF AGING— IMMUNE REGULATION

Postdoctoral fellowships are available in a collaborative program on the immunobiology of aging sponsored by the Sloan-Kettering Institute and Cornell University Medical College. Postdoctoral fellowships are also available at Cornell University Medical College for studies on the regulation and the ontogeny of the immune response in man and experimental animals. Applicants for either program should send curriculum vitae to: Dr. Gregory W. Siskind or Dr. Marc E. Weksler, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.

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### POSTDOCTORAL FELLOWSHIP Available 1 July

Molecular virologist to work on transcriptional studies of herpes simplex virus and the detection of HSV sequences in latent infections. Interested candidates should submit curriculum vitae with bibliography and references to: Dr. N. W. Fraser, The Wistar Institute, 36th and Spruce Streets, Philadelphia, Pa. 19104.

## FELLOWSHIPS

### FELLOWSHIPS—POSTDOCTORAL INTERDISCIPLINARY TRAINING PROGRAM IN THE NEUROSCIENCES

The Department of Psychiatry at the Johns Hopkins School of Medicine is accepting applicants for its NIMH Postdoctoral Interdisciplinary Training Program in the Neurosciences. The program offers training in basic research in the fields of behavioral biology, neurochemistry, neuropsychopharmacology, and neuroanatomy. Applicants should be M.D.'s, preferably with training in psychiatry or neurology, or Ph.D.'s in psychology, pharmacology, neurobiology, or related disciplines. Please send curriculum vitae and description of interests to: Joseph T. Coyle, M.D., Department of Psychiatry and Behavioral Sciences, Johns Hopkins School of Medicine, Baltimore, Maryland 21205. An Equal Opportunity/Affirmative Action Employer.

**Cerebrovascular Disease Postdoctoral Fellowships** are available beginning 1 July 1980 through 30 June 1982. Opportunities are available for a wide variety of training experience in neurobiological research relating to brain hypoxia and metabolic disorders, at both a basic and clinical level. Candidates should have completed a Ph.D. in one of the neurosciences or the M.D. and be planning a career in neurology-neuroscience. U.S. citizenship or permanent residency required. For further information, write: Dr. Fred Plum, Professor and Chairman, Department of Neurology, Cornell University Medical College, 1300 York Avenue, New York, New York 10021.

**POSTDOCTORAL FELLOWSHIPS IN CANCER RESEARCH.** The University of Rochester Cancer Center invites applications for a postdoctoral program which provides laboratory research training in a specific area of basic cancer research, and provides in addition systematic instruction in the biology and biochemistry of cancer. The goal of the program is to give the fellows a solid practical and conceptual background for a career in cancer research. The program is conducted in an integrated research and clinical setting and is designed to include both trainees with the Ph.D. degree and trainees with the M.D. degree who intend to pursue an academic career in oncology. Applicants are requested to send their curriculum vitae, a brief statement of their research interests and career goals, and three letters of reference to: Dr. Edgar C. Henshaw, University of Rochester Cancer Center, 601 Elmwood Avenue, Rochester, N.Y. 14642.

### HARVARD SCHOOL OF PUBLIC HEALTH POSTDOCTORAL FELLOWSHIPS



Interdisciplinary Programs in Health (IPH) invites applications from promising graduates of advanced degree programs in the natural or social sciences interested in turning to research and training in environmental health problems, particularly chemicals in the environment. The program focuses on both scientific and public policy questions.

Fellows will be appointed for terms of 1 or 2 years, possibly renewable. Stipends will be \$17,500 the first year.

*Expression of interest is particularly invited from qualified women and minority candidates.*

For information, write to:

Professor Donald Hornig  
Director, IPH  
Harvard School of Public Health  
665 Huntington Avenue  
Boston, Massachusetts 02115

**POSTDOCTORAL FELLOWSHIP—BEHAVIORAL GENETICS.** Requires a strong research background in genetics, psychology, or neurobiology and interest in research career interrelating these areas. Send curriculum vitae, statement of research interests, and three letters of reference to: V. Elving Anderson, Dight Institute for Human Genetics, University of Minnesota, 400 Church Street, SE, Minneapolis, Minn. 55455, or telephone 612-373-3639. To ensure consideration, respond by 15 May. An Equal Opportunity Educator and Employer.

## FELLOWSHIPS

One to 2-year **RESEARCH FELLOWSHIP** available beginning 1 January 1981. Requirements are M.D. degree with preference given to candidates with neurology, endocrinology, and/or biochemistry background. Research focus is carbohydrate metabolism in neurologic and neuromuscular disease with emphasis on insulin receptors, hexose membrane transport and carrier mechanisms in animal models and human disease. Stipend equivalent to NIH Career Development program. Send curriculum vitae and three letters of recommendation to: Barry W. Festoff, M.D., Neurobiology Research Laboratory, VA Medical Center, 4801 Linwood Boulevard, Kansas City, Mo. 64128.

### POSTDOCTORAL FELLOWSHIP

Position available immediately for Ph.D. and/or M.D. with experience in immunogenetics, immunopathology, or cellular immunology. Participate in ongoing NIH supported studies of experimental African trypanosomiasis. Salary of \$12,100 per year, with support for up to 3 years. Send curriculum vitae and names of three referees to:

Dr. John M. Mansfield  
Department of Microbiology and Immunology  
School of Medicine  
University of Louisville  
Louisville, Kentucky 40292  
Telephone: 502-588-5349/5351

### American Society for Microbiology Predoctoral Minority Fellowship

The American Society for Microbiology is offering one predoctoral minority fellowship for the academic year 1980-1981. Eligibility requirements are: (i) U.S. citizenship; (ii) membership of minority as defined by DHEW; and (iii) acceptance in a graduate academic degree program in microbiology in an accredited institution of higher learning in the United States. A stipend of \$5000 plus up to \$4000 for tuition and fees will be provided awardee. Send letter of application, curriculum vitae, two letters of recommendation, and letter of acceptance from major professor for predoctoral program to: Dr. Robert F. Acker, American Society for Microbiology, 1913 I Street, NW, Washington, D.C. 20006, by 1 May 1980.

**POSTDOCTORAL FELLOWSHIP IN BIOCHEMICAL GENETICS.** Position available for a recent Ph.D. interested in joining a group working on the applications of monoclonal antibodies to problems in human and mammalian enzyme genetics. Experience in enzyme purification desirable. Apply with curriculum vitae to: Dr. Harry Harris, Department of Human Genetics, School of Medicine, D-106 Richards Building, University of Pennsylvania, Philadelphia, Pa. 19104.

### POSTDOCTORAL RESEARCH TRAINING FELLOWSHIPS

Fellowships available to candidates with Ph.D. or M.D. and less than 1 year of postdoctoral laboratory experience for beginning training in basic biomedical research. Award includes stipend, research allowance, travel to fellowship location, dependency allowance, and annual meeting. Tenable for 3 years. Applications by 15 August; fellowships activate following July. Applicants must be in North America. For applications, write: The Helen Hay Whitney Foundation, 450 East 63 Street, New York, N.Y. 10021.

### The University of Western Ontario RESEARCH FELLOWSHIPS

The University of Western Ontario is offering research fellowships in any field in the basic or engineering sciences to begin on or after 1 July 1980. Successful candidates will be expected to devote their full time to a program of independent research, in association with faculty members. The term for the award is 1 year, once renewable, and the annual stipend is C\$20,000.

Applications are invited from individuals who have recently completed their Ph.D. degree and are, preferably, currently involved in postdoctoral research. Qualified candidates may submit applications, including detailed curriculum vitae, university transcripts, copies of publications, and confidential recommendations sent directly from three referees, by 31 May 1980, to:



Dr. H. W. Baldwin  
Research Officer  
The University of Western Ontario  
1151 Richmond Street  
London, Ontario, Canada  
N6A 5B8



## Opportunity at ORNL to research

### GLOBAL CARBON DIOXIDE

A scientist with a Ph.D. or equivalent experience is needed with a biological, chemical, or physical background who wishes to dedicate the next five to ten years to one of the most challenging environmental problems of our times—that of Global Carbon Dioxide. Oak Ridge National Laboratory is engaged in a major research project on the problems of global carbon dioxide. We are seeking a scientist who wishes to spend the next five to ten years devoted to working with an interdisciplinary research group on biogeochemical aspects of this global concern. Candidates must have a sufficient understanding of mathematics to work with modelers, chemistry to work with environmental chemists, and ecology to work with ecologists. Prerequisites are the ability to think in broad terms, the possession of analytical curiosity, and a willingness to devote several years to what is a major professional opportunity.



OAK RIDGE NATIONAL LABORATORY  
is operated by Union Carbide Corporation  
for the U.S. Department of Energy

Send resume to:



Central Employment Office  
Union Carbide Corporation  
Nuclear Division  
P.O. Box M  
Oak Ridge, Tennessee 37830  
AN EQUAL OPPORTUNITY EMPLOYER

### MOLECULAR BIOLOGISTS

Openings are available at New England Biolabs' new laboratory in Beverly, Massachusetts, USA.

*Ph.D. level:* Experience in cloning eukaryotic DNA, *in vitro* translation and other recombinant DNA techniques is essential.

*MS or BS level:* Minimum of two years experience in the isolation and purification of proteins, enzymology and quantitative biochemistry.

New England Biolabs, Inc. is a small group of microbiologists and molecular biologists involved in the production of restriction endonucleases and other enzymes useful for DNA research. New programs are being initiated to use genetic engineering for the production of proteins applicable to world health problems.

Send curriculum vitae to N.E. Biolabs, Inc., 283 Cabot Street, Beverly, MA 01915, USA.



NEW ENGLAND

**Biolabs**

283 Cabot Street  
Beverly, MA 01915

## NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

Opening Date: April 1, 1980

Closing Date: April 30, 1980

All applications must be postmarked by closing date

Director, Center for Research for Mothers and Children

The National Institute of Child Health and Human Development expects to appoint a permanent Director of the Center for Research for Mothers and Children. This Director is responsible for the development and operation of extramural programs (grants and contracts) related to the special health problems of mothers, children, adolescents and adults in the biomedical, social and behavioral sciences with special emphasis on pregnancy and perinatal biology, infancy, mental retardation, and human biological and behavioral development from conception to adulthood.

This is a Civil Service position in the Senior Executive Service (SES) with salary from \$47,889 to \$50,112.50 per year depending on qualifications. (Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service). The SES individual selected, if not presently in the SES, must serve a one-year probationary period. Mandatory professional/technical qualifications are: a Doctor of Medicine together with research and/or clinical experience in one or more of the specialty areas of pediatrics, obstetrics or neonatology. In addition, candidates must meet the minimally qualified level of the following mandatory managerial/executive qualifications: evidence of management of a basic or clinical research program, demonstrating ability to assume leadership responsibilities in developing program

goals; representing the program to outside groups; directing program planning, execution, and evaluation; and conducting a fair and equitable employment program, including the attainment of EEO objectives. Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the following factors: scientific peer recognition, scientific training and education, honors and awards and the degree to which they exceed the minimally qualified level of the mandatory managerial/executive qualifications. Additional information may be obtained from Mary Jane Meyers, Personnel Officer, NICHD, (301) 496-3365.

Applications (Personal Statement of Qualifications SF-171) are to be sent to the above individual at this address: National Institute of Child Health and Human Development, National Institutes of Health, Building 31, Room 2A25, Bethesda, Maryland 20205. A current curriculum vitae, bibliography and references and/or appraisals of performance must accompany all applications.

Applications of women and/or minority group members are especially solicited.

The National Institutes of Health is an equal opportunity employer.

## NATIONAL INSTITUTES OF HEALTH

# SOLAR ENERGY IN AMERICA

William D. Metz and Allen L. Hammond

An authoritative  
book that documents  
where solar energy has  
been and where it is going.

Based on in-depth reporting for SCIENCE magazine, **Solar Energy in America** is a thorough assessment of our progress in tapping the ultimate energy source—the sun. While no single energy source may meet all future demands, solar energy seems to have the greatest potential. It is technically feasible, environmentally attractive, and rapidly becoming commercially sound. **Solar Energy in America** details the diverse technologies that depend upon the sun as their energy source, evaluates the potential and the problems of each, and alerts the reader to both the short-term and long-range prospects. The authors find that the field of solar energy is undergoing an unparalleled technical revival, and that there is no reason why many solar technologies cannot begin to be used at once. **Solar Energy in America**—the latest edition of the expanding SCIENCE Report series\*—will be a useful publication for solar energy enthusiasts as well as skeptics, for college students as well as policy analysts. It is a AAAS book for everyone who wants a broad and thorough perspective on solar energy today.

**Solar Energy in America;** by William D. Metz and Allen L. Hammond. 1978, xvi + 218 pages, index.  
Retail price: \$18.50 (casebound), \$8.50 (paperbound).

\*The first title in the series is Combating the #1 Killer: The SCIENCE Report on Heart Research, by Jean L. Marx and Gina Bari Kolata. xi + 205 pages. \$17.00 (casebound), \$7.50 (paperbound). AAAS members deduct 10% from retail price.

To order your copy of **Solar Energy in America**, please send your name and address to AAAS, Sales Department, 1515 Massachusetts Avenue, NW, Washington, DC 20005. Remittance must accompany all orders under \$10.00. AAAS members deduct 10% from retail price. Please allow 6-8 weeks for delivery.



American  
Association  
for the  
Advancement  
of Science