

P. Ledoux and Th. Walraven in the *Handbuch der Physik* has been the standard reference in this field. Much progress has naturally been made since that article was written, for instance on the crucial issue of identifying instability mechanisms, and the astrophysical community was feeling an increasing need for an up-to-date review like the Ledoux and Walraven article.

Part of this need was filled by the excellent monograph *Nonradial Oscillations of Stars* by Unno, Osaki, Ando, and Shibahashi (University of Tokyo Press, 1979). That book is, however, restricted to nonradial oscillations and concentrates on the work done by the authors. John Cox's book encompasses the whole subject, with more than half devoted to radial oscillations. His approach is different, too; he is so careful in quoting everybody's contribution (his reference list totals a thousand entries) that his own contributions barely get the credit they deserve.

The treatment of radial oscillations is thorough and clarifies many fuzzy points, such as the differences between Eulerian and Lagrangian formulations, the evaluation of the stability coefficient through integral methods, and the cause of the phase lag between the light and velocity curves of the Cepheid variables. One can only regret that too little space is allotted to nonlinear theory, which governs pulsational amplitudes and mode selection and must therefore be invoked when confronting theory and observations.

Research on nonradial oscillations has expanded considerably since Ledoux and Walraven wrote, and Cox gives a well-documented account of its present state. It is natural that such an account reflect the personal preferences of the author; this probably explains why solar oscillations get a rather small share of attention. But the treatment as a whole is gratifying, and the reader will undoubtedly enjoy the illuminating discussion of many delicate questions, such as how to classify the oscillatory modes for the so-called complicated stellar models.

In the introduction, Cox explains that the book originated from a graduate course that he has taught. Yet his intent was to write not a textbook but a treatise that would be "of greatest use to students and research workers in this and related fields." One can be sure that this goal is achieved and that *Theory of Stellar Pulsation* will soon become an indispensable tool for such readers.

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## Books Received

**Analysis and Design of Dynamic Systems.** Ira Cochin. Harper and Row, New York, 1980. xviii, 796 pp., illus. \$29.50.

**Analytical Chemistry.** Gary D. Christian. Wiley, New York, ed. 3, 1980. xviii, 644 pp., illus. \$21.95.

**Analytical Techniques in Occupational Health Chemistry.** Papers from a symposium, Miami Beach, Sept. 1978. Donald D. Dollberg and Allen W. Verstuyft, Eds. American Chemical Society, Washington, D.C., 1980. x, 318 pp., illus. \$28. ACS Symposium Series, 120.

**Annual Review of Pharmacology and Toxicology.** Vol. 20. Robert George, Ronald Okun, and Arthur K. Cho, Eds. Annual Reviews, Palo Alto, Calif., 1980. xii, 692 pp., illus. \$17.

**Annual Review of Physiology.** Vol. 42. I. S. Edelman and Stanley G. Schultz, Eds. Annual Reviews, Palo Alto, Calif., 1980. x, 710 pp., illus. \$17.

**Annual Reviews Reprints: Immunology, 1977-1979.** Compiled by Irving Weissman. Annual Reviews, Palo Alto, Calif., 1980. x, 466 pp., illus. Paper, \$12.

**Antarctica and Its Resources.** Barbara Mitchell and Jon Tinker. Earthscan, London, 1980. 100 pp., illus. Paper, \$5.50.

**Aplastic Anemia.** Pathophysiology and Approaches to Therapy. Papers from a symposium, Reimsburg, Germany, July 1978. H. Heimpel, E. C. Gordon-Smith, W. Heit, and B. Kubanek, Eds. Springer-Verlag, New York, 1979. xiv, 294 pp., illus. Paper, \$36.50. Haematology and Blood Transfusion, 24.

**An Approach to Environmental Psychology.** Albert Mehrabian and James A. Russell. MIT Press, Cambridge, Mass., 1980. xiv, 266 pp. Paper, \$8.95. Reprint of the 1974 edition.

**Araneism.** With Special Reference to Europe. Zvonimir Maretić and Drago Lebez. Nolit Publishing House, Pula, Yugoslavia, 1979 (available as PB 80-141104 from National Technical Information Service, Springfield, Va.). 256 pp., illus. \$15.

**Basic Dimensions for a General Psychological Theory.** Implications for Personality, Social, Environmental, and Developmental Studies. Albert Mehrabian. Oelgeschlager, Gunne, and Hain, Cambridge, Mass., 1980. xxiv, 382 pp. \$20.

**Biofluid Mechanics.** Vol. 2. Proceedings of a conference, Blacksburg, Va., May 1980. Daniel J. Schneck, Ed. Plenum, New York, 1980. x, 520 pp., illus. \$59.50.

**Biological Effects of Ultraviolet Radiation.** Walter Harm. Cambridge University Press, New York, 1980. xiv, 216 pp., illus. Cloth, \$24.95; paper, \$8.95. IUPAB Biophysics Series, 1.

**Biological Magnetic Resonance.** Vol. 2. Lawrence J. Berliner and Jacques Reuben, Eds. Plenum, New York, 1980. xii, 352 pp., illus. \$39.50.

**Biological Principles with Human Perspectives.** Gideon E. Nelson. Wiley, New York, 1980. xii, 430 pp., illus. \$16.95.

**Biopharmaceutics and Clinical Pharmacokinetics.** An Introduction. Robert E. Notari. Dekker, New York, ed. 3, 1980. xii, 388 pp., illus. \$18.50.

**Biosocial Mechanisms of Population Regulation.** Papers from a symposium, Plattsburgh, N.Y., 1978. Mark Nathan Cohen, Roy S. Malpass, and Harold G. Klein, Eds. Yale University Press, New Haven, Conn., 1980. xxiv, 406 pp., illus. \$22.50.

**Brain and Personality.** Graham Powell. Praeger, New York, 1979. viii, 114 pp. \$19.95.

**Bubonic Plague in Early Modern Russia.** Public Health and Urban Disaster. John T. Alexander. Johns Hopkins University Press, Baltimore, 1980. xx, 386 pp. \$30. Johns Hopkins University Studies in Historical and Political Sciences, 98th series, 1.

**Calculus with Analytic Geometry for the Technologies.** Lawrence M. Clar and James A. Hart. Prentice-Hall, Englewood Cliffs, N.J., 1980. xii, 352 pp., illus. \$15.95. Prentice-Hall Series in Technical Mathematics.

**Cardiac Dynamics.** Papers from a conference, Leiden, The Netherlands, Aug. 1978. Jan Baan, Alexander C. Arntzenius, and Edward L. Yellin, Eds. Nijhoff, The Hague, 1980 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xxii, 550 pp., illus. \$81.60.

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**College Algebra.** Walter Fleming and Dale Varberg. Prentice-Hall, Englewood Cliffs, N.J., 1980. xvi, 466 pp., illus. + appendix. \$15.95.

**Commonsense in Nuclear Energy.** Fred Hoyle and Geoffrey Hoyle. Freeman, San Francisco, 1980. viii, 88 pp., illus. Cloth, \$7; paper, \$3.95.

**Compendium.** Vol. 14, 1977-1979. Richard E. Coy, Ed. American Equilibration Society, Chicago, 1979. xvi, 380 pp., illus. \$20.

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**The Design of Public Decision Systems.** Robert J. Mowitz. University Park Press, Baltimore, 1980. xiv, 162 pp. Paper, \$11.95.

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**The Dialectics of Social Life.** Alarms and Excursions in Anthropological Theory. Robert F. Murphy. Columbia University Press, New York, 1980. xiv, 262 pp. Paper, \$6. Reprint of the 1971 edition.

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**Educating Mentally Retarded Persons in the Mainstream.** Jay Gottlieb, Ed. University Park Press, Baltimore, 1980. xvi, 288 pp. Paper, \$17.50. Perspectives on Handicapping Conditions Series.

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spectives. Rhoda K. Unger. Harper and Row, New York, 1979. x, 564 pp., illus. \$15.95.

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**Fortran 77.** Principles of Programming. Jerrold L. Wagener. Wiley, New York, 1980. xiv, 370 pp., illus. Paper, \$12.95.

**French-English and English-French Dictionary of Technical Terms and Phrases.** J. O. Ketrtridge with a supplement by Yves R. Arden. Routledge and Kegan Paul, Boston, 1980. Two volumes. xvi, 1212 pp. + supplement. Each volume, \$40; the set, \$70. Reprint.

**Generalized Functions in Mathematical Physics.** V. S. Vladimirov. Translated from the Russian edition (1980) by George Yankovsky. Mir Publishers, Moscow, 1979 (U.S. distributor, Imported Publications, Chicago). xii, 364 pp. \$10.75.

**Genetic Maps.** Stephen J. O'Brien, Ed. Available from the editor, NCI-NIH, Building 37, Room 1C08, Bethesda, Md., 1980. 282 pp. + plates. Spiral bound, \$5.

**Geometric Methods in Mathematical Physics.** Proceedings of a conference, Lowell, Mass., Mar. 1979. G. Kaiser and J. E. Marsden, Eds. Springer-Verlag, New York, 1980. viii, 258 pp. Paper, \$16.80. Lecture Notes in Mathematics, vol. 775.

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**Grants for the Arts.** Virginia P. White. Plenum, New York, 1980. xviii, 360 pp. \$19.50.

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**Gregory Bateson.** The Legacy of a Scientist. David Lipset. Prentice-Hall, Englewood Cliffs, N.J., 1980. xii, 360 pp. + plates. \$16.95.

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**Handbook of the Birds of Europe, the Middle East and North Africa.** The Birds of the Western Palearctic. Vol. 2, Hawks to Bus-

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**Harmonic Analysis.** Proceedings of a conference, Iraklion, Greece, July 1978. N. Petridis, S. K. Pichorides, and N. Varopoulos, Eds. Springer-Verlag, New York, 1980. vi, 214 pp. Paper, \$14. Lecture Notes in Mathematics, vol. 781.

**Hartley's Microscopy.** W. G. Hartley. Senecio Publishing Company, Oxford, England, ed. 2, 1979. x, 220 pp., illus. Paper, £9.75.

**Health Care Economics.** Paul J. Feldstein. Wiley, New York, 1979. xvii, 458 pp., illus. \$18.95. Wiley Series in Health Services.

**Health Physics.** A Backward Glance. Thirteen Original Papers on the History of Radiation Protection. Papers from two meetings, San Francisco, 1976, and French Lick, Ind., Sept. 1978. Ronald L. Kathren and Paul L. Ziemer, Eds. Pergamon, New York, 1980. x, 238 pp., illus. \$25.

**Health Sciences and Services.** A Guide to Information Sources. Lois F. Lunin. Gale Research Company, Detroit, 1979. xxx, 614 pp. \$26. Management Information Guide Series, 36.

**The Heart of Enterprise.** The Managerial Cybernetics of Organization. Stafford Beer. Wiley, New York, 1980. xiv, 582 pp., illus. \$26.95.

**H. G. Wells: Discoverer of the Future.** The Influence of Science on His Thought. Roslynn D. Haynes. New York University Press, New York, 1980. xii, 284 pp. \$28.50. The Gotham Library of the New York University Press.

**The High Valley.** Kenneth E. Read. Columbia University Press, New York, 1980. xviii, 266 pp. + plates. Paper, \$6. Reprint of the 1965 edition.

**Historical Studies in the Physical Sciences.** Tenth Annual Volume. Russell McCormack, Lewis Pyenson, and Roy Steven Turner, Eds. Johns Hopkins University Press, Baltimore, 1980. x, 334 pp. \$24.95.

**Holography and Coherent Optics.** L. M. Soro. Translated from the Russian edition (Moscow, 1971) by Albin Tybulewicz. Plenum, New York, 1980. xviii, 818 pp., illus. \$59.50.

**Human Anatomy and Physiology for the Health Sciences.** Shirley R. Burke. Wiley, New York, 1980. xii, 466 pp., illus. \$12.95.

**Humphry Davy on Geology.** The 1805 Lectures for the General Audience. Robert Siegfried and Robert H. Dott, Jr., Eds. University of Wisconsin Press, Madison, 1980. xlv, 170 pp., illus. \$17.50.

**Hydrobiology.** A Text for Engineers and Scientists. Dietrich Uhlmann. Translated from the German edition (Jena, 1975). Wiley-Interscience, New York, 1980. 314 pp., illus. \$42.

**Ideas of Space.** Euclidean, Non-Euclidean, and Relativistic. Jeremy Gray. Clarendon (Oxford University Press), New York, 1979. xii, 224 pp., illus. \$28.50.

**An Illustrated Laboratory Text in Zoology.** Richard A. Booloootian and Donald Heyneman. Saunders, Philadelphia, 1980 (distributor, Holt, Rinehart and Winston, New York). xvi, 416 pp. Paper, \$8.95.

**The Image of Eternity.** Roots of Time in the Physical World. David Park. University of Massachusetts Press, Amherst, 1980. x, 150 pp., illus. \$14.50.

**Imaging Processes and Coherence in Physics.** Proceedings of a workshop, Les Houches, France, Mar. 1979. M. Schlenker and five others, Eds. Springer-Verlag, New York, 1980.

(Continued on page 1154)

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### BOOKS RECEIVED

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**Immunopathology.** Papers from a meeting, Niagara Falls, N.Y., June 1978. Felix Milgrom and Boris Albin, Eds. Karger, Basel, 1979. x, 350 pp., illus. \$97.25.

**Individual and Environment.** Monozygotic Twins Reared Apart. Niels Juel-Nielsen. International Universities Press, New York, ed. 2, 1980. 292 pp. + appendix. \$22.50.

**Information Transmission, Modulation, and Noise.** A Unified Approach to Communication Systems. Mischa Schwartz. McGraw-Hill, New York, ed. 3, 1980. xviii, 646 pp., illus. \$27.95.

**The Innovator's Situation.** Upper-Middle-Class Conservatism in Agricultural Communities. Frank Cancian. Stanford University Press, Stanford, Calif., 1979. xvi, 160 pp., illus. \$12.50.

**Inorganic Reaction Chemistry.** Systematic Chemical Separation. D. T. Burns, A. Townshend, and A. G. Catchpole, Horwood, Chichester, England, and Halsted (Wiley), New York, 1980. 248 pp., illus. \$57.50. Ellis Horwood Series in Analytical Chemistry.

**Insects of Hawaii.** Vol. 13, Diptera: Cyclorrhapha III, Series Schizophora, Section Acalypterae, Exclusive of Family Drosophilidae. D. Elmo Hardy and Mercedes D. Delfinado. University Press of Hawaii, Honolulu, 1980. viii, 452 pp., illus. Paper, \$20.

**Interactions in Magnetically Ordered Solids.** Krityunjai Prasad Sinha and Narendra Kumar. Oxford University Press, New York, 1980. xii, 180 pp., illus. \$36.50.

**International Energy Policy.** Papers from a symposium. Robert M. Lawrence and Martin O. Heisler, Eds. Lexington (Heath), Lexington, Mass., 1980. xii, 222 pp. \$22.95.

**Introduction to Meteorology.** Franklyn W. Cole. Wiley, New York, ed. 3, 1980. xx, 506 pp., illus. \$17.95.

**An Introduction to the Theory of Numbers.** G. H. Hardy and E. M. Wright. Clarendon (Oxford University Press), New York, ed. 3, 1979. xvi, 426 pp., illus. Cloth, \$49.95; paper, \$16.95.

**Kinanthropometry II.** Papers from a seminar, Leuven, Belgium, July 1978. Michel Ostyn, Gaston Beunen, and Jan Simons, Eds. University Park Press, Baltimore, 1980. xxii, 518 pp., illus. \$49.50. International Series on Sport Sciences, vol. 9.

**Lake Management.** S. W. Jørgensen. Pergamon, New York, 1980. xii, 168 pp., illus. \$36. Water Development, vol. 14.

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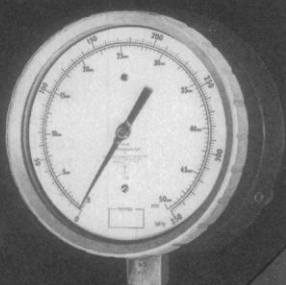
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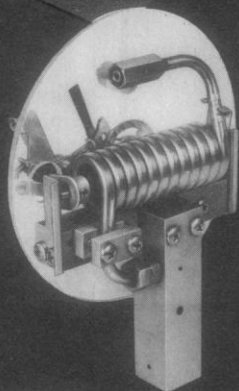
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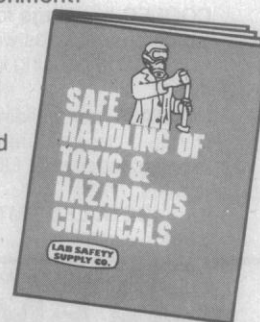
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versity Press), New York, 1979. x, 488 pp., illus. \$58.

**New Technology of Pest Control.** Carl B. Huffaker, Ed. Wiley-Interscience, New York, 1980. xviii, 500 pp., illus. \$29.50. Environmental Science and Technology.

**Non-Nuclear Futures.** The Case for an Ethical Energy Strategy. Amory B. Lovins and John H. Price. Harper and Row, New York, 1980. xxvi, 230 pp. Paper, \$3.95. Harper Colophon Books. Reprint of the 1975 edition.

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**Optimal Spatial Interaction and the Gravity Model.** Sven Erlander. Springer-Verlag, New York, 1980. viii, 108 pp. Paper, \$12. Lecture Notes in Economics and Mathematical Systems, vol. 173.

**Organic Chemistry.** Syntheses and Reactivity. Springer-Verlag, New York, 1980. iv, 172 pp., illus. \$54.90. Topics in Current Chemistry, 88.

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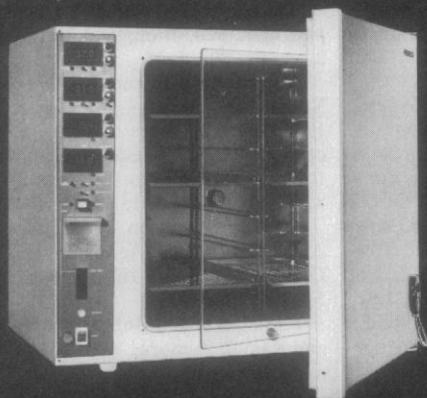
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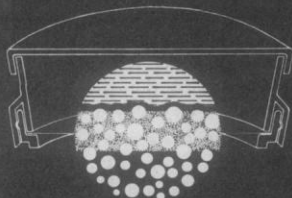
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**Quantum Flavordynamics, Quantum Chromodynamics, and Unified Theories.** Papers from a NATO Advanced Study Institute, Boulder, Colo., July 1979. K. T. Mahanthappa and James Randa, Eds. Plenum, New York, 1980. xii, 494 pp., illus. \$59.50. NATO Advanced Study Institutes Series B, vol. 54.

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**Selected Papers of Leon Rosenfeld.** Robert S. Cohen and John J. Stachel, Eds. Reidel, Boston, 1979. xxxiv, 930 pp. Cloth, \$74; paper, \$28.50. Synthese Library, vol. 100. Boston Studies in the Philosophy of Science, vol. 21.

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**Plankton Ecologist/Physiologist.** Ph.D., January 1981. Extensive shipboard experience in coastal Florida and Atlantic shelf areas. More than 10 years of laboratory experience in such varied areas as continuous culture of phytoplankton, thermal tolerance of zooplankton, dynamics of nutrient and carbon metabolism of marine algae, and interrelationships among phytoplankton, marine sediments, and geochemical processes. Seeks challenging position in theoretical or applied research; will consider related teaching position. Prefers New York City metropolitan area. Box 290, SCIENCE. X

## POSITIONS OPEN

The DEPARTMENT OF ANATOMY at the University of Mississippi Medical Center seeks qualified candidates for four positions. Academic rank and salary will be commensurate with education and experience. Preference will be given to candidates now conducting active research which can be broadly categorized in one or more of the following areas: (i) cell biology of the brain, (ii) developmental neurobiology, (iii) motor mechanisms, and (iv) sensory mechanisms (with an emphasis on nociceptive mechanisms). Successful candidates will teach in gross anatomy, histology, or neuroanatomy and are expected to teach specialized graduate courses related to their research.

Candidates must have a Ph.D. and/or M.D. and at least 2 years of postdoctoral training, with evidence, through publications, of promise and commitment to a research career.

Interested individuals should send curriculum vitae, a description of their research interest, and the names of three referees to: Dr. Kenneth V. Anderson, Professor and Chairman, Department of Anatomy, University of Mississippi Medical Center, Jackson, Miss. 39216. Deadline for receipt of applications: 1 February 1981. Equal Opportunity Employer, M/F.

### POSITION IN AQUATIC ECOLOGY

Applications are invited for a professor in aquatic sciences (specialty open) at the Appalachian Environmental Laboratory, Center for Environmental and Estuarine Studies, University of Maryland, Frostburg.

A significant record of research and educational accomplishments is required of the successful candidate. The applicant should possess an international reputation and be currently administering a strong research program as evidenced by publications and grantsmanship. Teaching responsibilities will not exceed one course per semester and the advising of graduate students. Salary will be competitive. Nominations and inquiries should be forwarded in writing no later than 9 January 1981. Each applicant should submit a summary of present and future goals, names of six potential referees, and curriculum vitae to: Chairman, Search Committee, University of Maryland, Center for Environmental and Estuarine Studies, Appalachian Environmental Laboratory, Frostburg State College Campus, Frostburg, Maryland 21532.

An Equal Opportunity Employer

## POSITIONS OPEN

**ASSISTANT/ASSOCIATE PROFESSOR.** Tenure-track position. Ph.D. or equivalent degree and postdoctoral research experience; evidence of training and experience in pharmacology/toxicology. Teach undergraduate and graduate courses and establish a research program. Submit résumé with letters of reference by 15 January 1981 to: Dr. John J. DeFeo, Pharmacology and Toxicology, College of Pharmacy, UNIVERSITY OF RHODE ISLAND, Kingston, Rhode Island 02881. An Affirmative Action/Equal Opportunity Employer.

**ASSISTANT PROFESSOR, BIOCHEMISTRY.** The Department of Chemistry at the University of Denver will have a tenure-track faculty position open for an assistant professor in the area of biochemistry beginning September 1981. The person assuming this position will be expected to develop a vigorous research program and build a reputation as an effective teacher of undergraduate and graduate students. Persons wishing to apply should send their résumé and a brief description of their proposed research to: Professor Dwight M. Smith, Chairman, Department of Chemistry, UNIVERSITY OF DENVER, Denver, Colo. 80208. Please arrange to have three letters of recommendations sent. Formal review of applications will begin 5 January 1981. Affirmative Action/Equal Opportunity Employer, M/F/H.

### ASSISTANT PROFESSORSHIPS IN BIOLOGICAL SCIENCE

Applications are sought for positions at the assistant professor level in any area of biological science. Applicants are expected to have a commitment to undergraduate teaching and to have a strong interest and record in research. The Ph.D. degree is required and postdoctoral experience is preferred.

Send curriculum vitae, selected reprints, and telephone numbers of three references to:

Chairman, Search Committee  
Department of Biology  
Texas A & M University  
College Station, Texas 77843

Deadline for receipt of applications is 15 February 1981. Texas A & M is an Affirmative Action/Equal Opportunity Employer.

### ASSISTANT/ASSOCIATE PROFESSOR CELLULAR NEUROPHYSIOLOGY

The Department of Physiology and Biophysics at The University of Iowa College of Medicine invites applications for tenure-track appointments at the assistant or associate professor level. We are seeking individuals employing a quantitative approach to neurophysiology at the cellular or molecular level with particular interests in vertebrate CNS function, neurodevelopment, plasticity, or cellular biophysics. Applicants must have the Ph.D. and/or M.D. degree and two or more years of postdoctoral or faculty experience, with an excellent record of productivity in original research. Candidates should be prepared to conduct a strong independent research program and take an active role in the medical and graduate teaching activities of the department. Please send curriculum vitae, a brief description of research interests, teaching experience and career objectives, an indication of rank desired, and names of at least three references to: Dr. Peter Getting, Department of Physiology and Biophysics, The University of Iowa College of Medicine, Iowa City, Iowa 52242.

The University of Iowa is an Equal Opportunity/Affirmative Action Employer. We welcome applications from qualified female and minority candidates.

### Biologist

### TISSUE CULTURE BIOLOGIST SOUTHERN CALIFORNIA

Leading tissue culture labware manufacturing concern has an immediate requirement for enterprising B.S./M.S. who has majored in cell biology or virology. Ideally, this individual will have 2 to 3 years of laboratory experience in tissue culture, with a thorough knowledge of biochemical and immunological techniques.

Our progressive firm offers an attractive starting salary and benefits package, in a sunny coastal environment. For consideration, please address résumés in confidence to: Human Resources Department, BECTON DICKINSON LABWARE, 1950 Williams Drive, Oxnard, Calif. 93030. As an Equal Opportunity Employer, we encourage all qualified minorities and females to apply.



## POSITIONS OPEN

**Brown University** announces the opening of a tenure-track **ASSISTANT PROFESSOR** position in **CHEMICAL ENGINEERING**, available 1 September 1981. Applicants should have a Ph.D. or equivalent degree and show exceptional promise of attaining excellence in independent research in the chemical engineering sciences or related fields. Duties will include teaching undergraduate and graduate courses in chemical engineering and independent research in chemical engineering science or related areas. Applicants should have a demonstrated ability to make clear and effective presentations of scientific and technical material. Forward complete résumés, including the names of at least three persons who, if requested, could supply letters of reference, to: **Professor J. T. C. Liu, Division of Engineering, BROWN UNIVERSITY, Providence, Rhode Island 02912**. To insure full consideration, applications should be received by 15 February 1981. *Brown University is an Equal Opportunity Employer.*

### ASSISTANT PROFESSORS OF CHEMISTRY

The Department of Chemistry, Rutgers University, New Brunswick, New Jersey, is seeking to fill four tenure-track positions at the assistant professor level. Applicants must demonstrate ability to initiate and sustain a vigorous research program and be committed to teaching. *Women and minority candidates are encouraged to apply.* Postdoctoral experience is desirable.

Position 1: **POLYMER CHEMIST** with strong interest in synthesizing novel polymers.

Position 2: **ANALYTICAL CHEMIST**.

Position 3: **INORGANIC CHEMIST**.

Position 4: **CHEMIST** in area not mentioned above.

Please refer in all correspondence to the number of the position for which you are applying. Submit résumé, including a detailed outline of research objectives, and arrange to have three letters of recommendation forwarded to: **Professor Joseph Potenza, Chairman, Department of Chemistry, Busch Campus, Rutgers, The State University of New Jersey, New Brunswick, New Jersey 08903**. *Rutgers is an Equal Opportunity/Affirmative Action Employer.*

**SENIOR FACULTY POSITION IN CHEMISTRY**—Rutgers University. Successful candidate must be committed to continuing an established, active research program and to teaching at all levels. While applicants in all areas are encouraged to apply, our greatest needs are in the areas of **SYNTHETIC POLYMER CHEMISTRY, INORGANIC CHEMISTRY, and ANALYTICAL CHEMISTRY**. Applications from both academic and industrial chemists are invited. *Women and minority candidates are encouraged to apply.* Submit résumé to: **Professor Joseph Potenza, Chairman, Department of Chemistry, Busch Campus, Rutgers, The State University of New Jersey, New Brunswick, New Jersey 08903**. *Rutgers is an Equal Opportunity/Affirmative Action Employer.*

The **GEOPHYSICS PROGRAM** at the University of Washington seeks applicants for a tenure-track, **ASSISTANT PROFESSOR** position, beginning September 1981. Candidates specializing in the areas of space physics or applied geophysics are of particular, but not exclusive, interest. All applications should be heavily committed to high-quality teaching at the graduate level, to advising graduate students on important and advanced research projects, and to carrying out innovative, independent research. A Ph.D. is required. Interested persons should send a résumé and four letters of recommendation to: **Dr. Ronald T. Merrill, Geophysics Program AK-50, University of Washington, Seattle, Washington 98195**. Deadline for applications is 28 February 1981. *An Equal Opportunity/Affirmative Action Employer*

The **GEOPHYSICS PROGRAM** of the University of Washington seeks applicants for a nontenure-track, **RESEARCH ASSISTANT PROFESSOR** position in applied geophysics, beginning September 1981. The position will be primarily supported by research grants and contracts. The successful candidate must be strongly committed to research and teaching, and be able to teach courses and supervise graduate student research in reflection seismology-seismic stratigraphy, geophysical well logging, and rock mechanics. Research interests should emphasize laboratory and field investigations of seismic wave interaction with fractured rock, with special attention to the borehole environment. Ph.D. is required. Interested persons should send résumé and four letters of recommendation to: **Dr. Ronald T. Merrill, Geophysics Program AK-50, University of Washington, Seattle, Washington 98195**. Deadline for applications is 28 February 1981. *An Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

**VISITING ASSISTANT, ASSOCIATE, OR FULL PROFESSOR OF CHEMISTRY**. A 1- or 2-year temporary appointment will be made effective 1 July 1981. Applicants must have a Ph.D. and a strong background in physical chemistry. Besides teaching undergraduate chemistry courses there will be opportunities to supervise chemistry majors in their honors research projects and participate in the research programs of other department members. Please send a résumé and a brief description of your teaching and other interests to:

**Chairman, Department of Chemistry  
Amherst College  
Amherst, Massachusetts 01002**

Transcripts and three letters of recommendation must be received by 9 February 1981 if your application is to be considered. Salary will be competitive based on qualifications and experience. *Amherst College is an Equal Opportunity/Affirmative Action Employer, M/F/H.*

**ASSISTANT PROFESSOR, FOOD SCIENCE**; calendar year, tenure-track, to teach (70 percent) and to develop a research program in area of chemistry and technology of foods (30 percent). Position requires Ph.D. and commitment to teaching; industrial experience highly desirable. Send résumé, transcripts, copies of publications, and names of four references before 1 February 1981 to: **Dr. Dick H. Kleyn, Department of Food Science, Cook College, Rutgers University, New Brunswick, N.J. 08903**. *Rutgers University is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSORS OF GEOGRAPHY** (two), tenure-track, University of Georgia, fall 1981. **Position 1:** ability to teach introductory cartography and/or air photo interpretation with research specialty in cartography or other systematic field. **Position 2:** ability to teach introductory physical geography with advanced teaching and research in geomorphology or related areas. Ph.D. required. Salary dependent on qualifications and experience. Excellence in teaching and strong research potential sought. Submit curriculum vitae and names and addresses of three references. Application deadline: 31 January 1981. *Equal Opportunity/Affirmative Action Institution.* Apply to: **James O. Wheeler, Head, or C. W. Pannell, Chair, Staffing Committee, Department of Geography, University of Georgia, Athens, Ga. 30602**. Telephone: 404-542-2856.

### ASSISTANT PROFESSOR OF MARINE SCIENCE

We seek a faculty member whose primary activity will be to perform independent and team research in the area of biological and chemical cycles and processes in marine environments. While we are especially interested in individuals who approach research from a microbiological or molecular point of view, the primary qualification is potential for sustained research excellence in the general area of marine processes. This is a regular tenure-track position. Graduate student supervision and teaching are expected. Applications, including curriculum vitae and names of at least three referees, should be sent by 2 February 1981 to: **Dr. C. P. McRoy, Search Committee, Institute of Marine Science, University of Alaska, Fairbanks, Alaska 99701**. *The University of Alaska is an Affirmative Action/Equal Opportunity Employer and Educational Institution.*

**ASSISTANT PROFESSOR OF MICROBIOLOGY**, animal virologist, to begin September 1981; tenure-track position expected (10-month academic year appointment). Ph.D. with postdoctoral or similar experience desirable. Duties include teaching virology and public health microbiology. Research in virology expected. Salary dependent upon qualifications. Send résumé, list of publications, references, and statement of research and teaching interest by 1 February 1981 to: **Dr. R. M. Zsigray, Chair, Department of Microbiology, University of New Hampshire, Durham, N.H. 03824**. *Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT PROFESSOR OF PHARMACOLOGY**. Applications are invited from qualified candidates with a Ph.D. or M.D. degree. Applicants must have a minimum of 2 years postdoctorate experience. Position offers opportunities to develop a research program and to participate in the teaching of graduate and medical pharmacology. Submit a résumé of research interests, curriculum vitae, and three letters of recommendation to: **Dr. Michael J. Peach, Department of Pharmacology, Box 448, University of Virginia School of Medicine, Charlottesville, Virginia 22908**. *The University of Virginia is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR OF PHARMACOLOGY

The Department of Pharmacology, Medical College of Virginia, Virginia Commonwealth University, seeks applicants for a faculty position at the assistant professor level, beginning 1 July 1981. Candidates should have a strong research and teaching base, and have at least 2 years of postdoctoral training. The department has broad, ongoing research strengths in the areas of CNS, cardiovascular pharmacology, and toxicology. Applications including three references, should be sent by 1 February 1981 to:

**Louis S. Harris, Chairman  
Department of Pharmacology  
Medical College of Virginia  
Virginia Commonwealth University  
MCV Station Box 27  
Richmond, Virginia 23298**

*An Equal Opportunity/Affirmative Action Employer*

**ASSISTANT PROFESSOR OF PHYSICS**. Tenure-track position beginning August 1981. Candidates must have Ph.D. and show promise of establishing a strong research program as well as a proven teaching record. Teaching duties will include introductory and upper-division-level physics courses. Preference will be given candidates with a background in medical or radiation physics or low-temperature solid-state physics. Send résumé and outline of research plans, and have three letters of reference sent by 16 January 1981 to: **Professor Morris Firebaugh, Physics Department, University of Wisconsin-Parkside, Kenosha, Wis. 53141**. Telephone: 414-553-2465. *An Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT OR ASSOCIATE PROFESSOR**, tenure-track, **PHYSIOLOGY**, Ph.D. Applications are invited to fulfill departmental obligations for undergraduate courses in physiology. Starting date is August 1981. Candidates at the associate professor level should have teaching experience. Postdoctoral research experience is desired. Candidates should be qualified to contribute to graduate courses in cellular or comparative physiology. Persons with active research programs in neuroscience, endocrinology, or membrane biology have high priority. Submit résumé, statement of research interests, and the names and addresses of three referees by 30 August 1981 to: **Dr. Duncan W. Martin, Chairman, Department of Zoology, SE 632, University of Arkansas, Fayetteville, Ark. 72701**. *Affirmative Action/Equal Opportunity Employer.*

The University of Michigan affiliated Veterans Administration Medical Center, Ann Arbor, Michigan, is seeking an M.D. or Ph.D. with training in the field of education and experience in a health care setting to serve as **ASSOCIATE CHIEF OF STAFF FOR EDUCATION** at this 368-bed general medical/surgical facility. The individual selected will be responsible for developing a comprehensive education program for the hospital, including graduate medical education, continuing education, patient education, allied health education, and career development. He or she must also qualify for a faculty appointment in an appropriate academic unit at the University of Michigan. Please send résumé to: **Dr. William O. Dobbins, Associate Chief of Staff for Research, Veterans Administration Medical Center, Ann Arbor, Mich. 48105**. *Equal Opportunity/Affirmative Action Employer.*

### ASSOCIATE DEAN FOR ADMINISTRATION THE JOHNS HOPKINS SCHOOL OF MEDICINE

The associate dean for administration is the resource manager of the School of Medicine and has responsibility for:

Financial Planning and Operations,  
Personnel,  
Space Allocations and Facilities Management,  
Grant and Contract Administration, and  
Medical Practice Plan Administration.

The successful candidate will possess excellent oral and written communication skills and ability to relate effectively to a wide range of people. A strong medical school management background and an M.D. or Ph.D. degree would be desirable.

Send résumé to:

**Paul D. Johnson, Ph.D.  
Manager, Human Resources  
Planning and Development  
Johns Hopkins Medical Institutions  
601 North Broadway  
Baltimore, Maryland 21205**

*The Johns Hopkins University is an Equal Opportunity Employer.*

## POSITIONS OPEN

### BACTERIAL PATHOGENESIS/GENETICS

A new combined program in infectious diseases and medical microbiology has a full-time faculty position for M.D. or Ph.D. with laboratory interest in bacterial pathogenesis/genetics. Opportunity to interact with cell, viral, and molecular biology group. Ability to participate in teaching medical student microbiology is desirable. *The University of Utah is an Equal Opportunity/Affirmative Action Employer.* Reply to: **Dr. C. B. Smith, Department of Medicine, University of Utah College of Medicine, Salt Lake City, Utah 84132.**

### BIOCHEMICAL PHARMACOLOGIST

The Department of Biochemical Pharmacology of the State University of New York at Buffalo (SUNY/B) is seeking a biochemical pharmacologist. An individual is sought with experience in one or other of the following areas: CNS pharmacology with a biochemical orientation; biochemical endocrine pharmacology; cellular toxicology. The candidate should have a Ph.D. in pharmacology, and two or more years of experience beyond the postdoctoral level. Ideally, the applicant will have an ongoing and funded research program. Teaching responsibilities will include participation in undergraduate general pharmacology courses and research and teaching at the graduate level. Level: assistant professor (or under exceptional circumstances, associate professor); tenure-track. Please send curriculum vitae and the names of three references to: **Dr. D. J. Trigg, Department of Biochemical Pharmacology, 317 Hochstetter Hall, State University of New York, Buffalo, New York 14260.** *SUNY/B is an Equal Opportunity/Affirmative Action Employer.* Deadline for applications: 15 February 1981.

**ACADEMIC POSITION—BIOCHEMIST** with interest in immunology to use monoclonal antibodies for immunosorbent chromatography for purified labile proteins; 1- to 2-year appointment. Salary: \$16,000. Contact:

**Dr. Joseph W. Burnett  
Division of Dermatology  
University of Maryland Hospital  
22 South Greene Street  
Baltimore, Md. 21201**

**BIOCHEMIST**—One-year sabbatical replacement. Teach biochemistry courses to majors and service course to biology majors. Step into a well-run lecture-laboratory course. Gain experience and walk away with lecture notes, handouts, overheads, laboratories, and so forth.

**Ph.D. preferred**, but progress toward doctoral degree with demonstrated teaching ability acceptable. Send curriculum vitae and two letters of recommendation to:

**Dr. William Zapisek  
Canisius College  
Buffalo, N.Y. 14208**

*Canisius College is an Equal Opportunity Employer.*

**BIOLOGIST**—Tenure-track position to begin fall 1981. Broadly trained biologist needed to teach cell biology, introductory biology courses, and an undergraduate course in specialty at liberal arts college. Preference will be given applicants with interest and strength in undergraduate teaching and research interest in plant biology or physiological ecology. Ph.D. required. Applicants should send résumé and names of three or more references to: **Dan T. Bedsole, Dean of the Faculty, Austin College, Sherman, Texas 75090.** *Equal Opportunity Employer.*

### CELL BIOLOGISTS—ANATOMISTS

The University of North Carolina at Chapel Hill invites applications for junior and senior faculty positions in the Department of Anatomy and Laboratories for Cell Biology. Applicants must have postdoctoral research experience and goals in cell surface or membrane biology, cellular immunobiology, cancer cell biology, somatic cell genetics, cellular neurobiology, or the biology of cytoskeleton or cell motility. Research utilizing cell culture methods in developmental, reproductive, and neurobiology especially desirable. Teaching obligations will be in medical histology, neurobiology, human gross anatomy, or in graduate-level courses in cell biology. Send curriculum vitae, a brief description of research plans, and the names of three references to: **Dr. Charles R. Hackenbrock, Chairman, Department of Anatomy, School of Medicine, 111 Swing Building 217H, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514.**

*An Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

### Ph.D.—BIOCHEMIST OR PHYSIOLOGIST

Los Angeles-based endocrinology laboratory has opening for Ph.D.—biochemist or physiologist to serve as Peptide Hormone Section Chief. Candidates must have fundamental knowledge of peptide hormone physiology and basic experience in development and use of peptide RIA methods. Capabilities must extend beyond evaluation of commercial kits. Candidates must also have good organizational skills and supervisory experience. Excellent salary and benefits. Opportunity to participate in R & D and company management. Send résumé and salary requirements to:

**Endocrine Sciences  
18418 Oxnard Street  
Tarzana, California 91356  
Telephone: 213-345-6503**

**BIOLOGY FACULTY POSITIONS:** George Mason University has two tenure-track positions for fall 1981.

- 1) **INVERTEBRATE PHYSIOLOGIST** to teach an undergraduate introductory animal physiology course and a graduate comparative physiology course. Teaching may include human anatomy and physiology for allied health science students.
- 2) **VERTEBRATE PHYSIOLOGIST** to teach endocrinology and/or reproductive physiology. Duties will include teaching human anatomy and physiology to health science students and developing a graduate course in the area of specialization.

The development of an active research program is expected. Applicants must have the Ph.D. degree by 1 September 1981. Complete applications containing curriculum vitae, transcripts, description of research activities, and three letters of recommendation must be received by 30 January 1981. Send applications to:

**Chairperson of Invertebrate Physiology or  
Vertebrate Physiology Search Committee  
Biology Department  
George Mason University  
Fairfax, Virginia 22030**

*George Mason University is an Affirmative Action/Equal Opportunity Employer and minorities are encouraged to apply.*

### CARDIOVASCULAR PHYSIOLOGIST UNIVERSITY OF ALABAMA IN BIRMINGHAM

The Department of Physiology and the Cardiovascular Research and Training Center jointly offer a tenure-track assistant professorship to candidates engaged in basic research on hypertension. The successful applicant will be expected to participate in the teaching of cardiovascular physiology to medical and dental students, to train graduate students, and to develop an independent research program. The position requires a doctoral degree and postdoctoral training. Send curriculum vitae, bibliography, and names of three references by 1 January 1981 to:

**Professor J. D. Neill  
Department of Physiology and Biophysics  
University of Alabama in Birmingham  
Birmingham, Alabama 35294**

*The University of Alabama in Birmingham is an Equal Opportunity/Affirmative Action Employer.*

### CARDIOVASCULAR PHYSIOLOGIST

The Department of Physiology, Medical College of Ohio, invites applications for a tenure-track faculty position at the rank of assistant/associate professor. The appointee will be expected to teach cardiovascular physiology to medical, graduate, and nursing students to develop an independent research program worthy of external support. Applicants should send their curriculum vitae, names and addresses of three references, a summary of current academic activities, and other supporting information to: **Dr. Jyotsna Chakraborty, Chairman, Search Committee, Department of Physiology, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.** *The Medical College of Ohio is an Affirmative Action/Equal Opportunity Employer.*

**CHAIRPERSON.** Department of Biochemistry—Candidates must have substantial background in academic medicine evidenced by a record of excellence in teaching, research, and leadership in medical and graduate education. Interested persons are encouraged to submit their credentials and curriculum vitae to: **Dr. Donald E. Hill, Chairman, Biochemistry Search Committee, Slot 512, University of Arkansas College of Medicine, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.** *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### CHAIRPERSON

The Indiana University School of Medicine invites applications for the position of **professor and chairperson**, Department of Microbiology and Immunology. The candidate should have a vital commitment to academic excellence, national recognition for research accomplishments, and strong experience in medical education and administration. The department is multidisciplinary with active research programs and with teaching responsibilities in the School of Medicine as well as Dentistry, Nursing, and the Graduate School. Interested parties should send their curriculum vitae and the names of four references by 15 January 1981 to: **C. D. Nordschow, M.D., Chairman, Search and Screen Committee, Department of Pathology, Indiana University School of Medicine, 1100 West Michigan Street, Indianapolis, Indiana 46223.**

*Indiana University is an Affirmative Action/Equal Opportunity Employer, M/F.*

**CHAIRPERSON, DEPARTMENT OF CHEMISTRY, LOYOLA UNIVERSITY OF CHICAGO.** Starting 1 July 1981. Criteria for selection include: Ph.D. in chemistry with a minimum of 5 years of teaching experience; documented accomplishments in scholarship and research; and ability to direct and administer educational and scientific programs involving 18 faculty, 20 full-time and 20 part-time graduate students. The department offers the Ph.D., M.S., and ACS-approved B.S. and B.A. degrees. The successful candidate will be expected to lead the department in program development, recruitment of students, and faculty development in teaching, research, and service. Experience in attracting external funding is desired. Rank and salary are commensurate with experience. Nominations or applications, including curriculum vitae and three references, should be sent prior to 15 January to: **Chairman, Search Committee, 300 Cudahy Science Building, Loyola University of Chicago, 6525 North Sheridan Road, Chicago, Illinois 60626.**

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

University of California, Los Angeles (UCLA), Neuropsychiatric Institute, seeks **CHIEF NEUROPSYCHOLOGIST** to develop and direct major new training program in neuropsychology. **Qualifications:** clinical and research experience with neurological, neurosurgical, and psychiatric patients, both adults and children, including mental retardation, learning disabilities, and substance abuse; substantial experience in training neuropsychologists; and academic achievements, including publications, sufficient to qualify for senior faculty appointment. **Contact:** **Peter Tanguay, M.D., Chairman, Neuropsychology Search Committee, 760 Westwood Plaza, Los Angeles, Calif. 90024.** *Equal Opportunity/Affirmative Action Employer.*

### HUNTER COLLEGE City University of New York DEAN OF SCIENCES AND MATHEMATICS

Challenging position available July 1981, in dynamic urban institution. Strong doctoral research programs; extensive federal funding; major commitment to women and minorities; MBS and MARC programs; stable enrollments; major expansion of facilities in progress; attractive midtown Manhattan location. Send curriculum vitae and names of three references to: **Chair, Search Committee for Dean of Sciences and Mathematics, Box 447, Hunter College, 695 Park Avenue, New York, New York 10021.** *An Equal Opportunity/Affirmative Action Employer.*

The University of California, Davis, announces a position in the **DEPARTMENT OF DERMATOLOGY** for a basic science research-oriented faculty member with clinical and teaching responsibilities. Experience in clinical teaching and basic research (with experience in cell and tissue culture preferred). Rank and salary commensurate with credentials. Send curriculum vitae and list of three references to:

**Chair, Search Committee  
c/o Department of Dermatology  
University of California, Davis  
205 Professional Building  
Sacramento, Calif. 95817**

Applications accepted through 31 January 1981.  
*Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

### CHAIRPERSON Department of Biological Sciences Illinois State University

Applications are invited for chairperson of a large, diverse department (35 full-time faculty members) within a university of 19,500 students situated in central Illinois. The department offers B.S., M.S., and Ph.D. degrees. Present enrollment includes 400 undergraduate majors, 69 M.S., and 27 Ph.D. candidates. Minimum qualifications include a Ph.D., academic experience in undergraduate and/or graduate teaching, and demonstrated quality research ability in an area of biology compatible with departmental needs. Administrative experience is desirable. Rank and salary are negotiable. The tenure-track position is available 1 August 1981 and carries a 12-month contract. Send curriculum vitae and three letters of recommendation before 1 February 1981 to:

Dr. Mary Zey-Ferrell  
Chairperson Search Committee  
Department of Biological Sciences  
Illinois State University  
Normal, Illinois 61761  
Telephone: 309-438-3127

An Equal Opportunity/Affirmative Action Employer

## Clinical Diagnostics Chemists

Continued growth has created the need for chemists to be responsible for development of diagnostic products. Primary requirements include a Ph.D./M.S. in immunology, biochemistry, or related area and 2 to 5 years of R & D experience in immunology, enzymology, endocrinology, or protein chemistry. Candidates should also have a background in purification of antigen and antibodies, hapten and protein labeling, and immunoassay development. For immediate consideration, send résumé in confidence to: **Personnel Director, Bio-Rad Laboratories, 2200 Wright Avenue, Richmond, Calif. 94804.**

**BIO-RAD Laboratories**

An Equal Opportunity Employer

### PHYSICIST GS-1310-13, \$32,048 per annum Full-time Permanent Time & Frequency Division National Bureau of Standards, Boulder, Colorado

Serves as a team leader in research and development toward a new microwave or optical standard based on stored ion technology. Serves also as a key worker in research and development of other quantum electronic frequency standards such as hydrogen and cesium beam devices. The incumbent will use his/her theoretical expertise in atoms and molecules to calculate various quantum mechanical processes (for example, hyperfine structure, magnetic and electric dipole transition moments, and so forth) and to estimate important perturbations due to various measurement processes which have traditionally eluded precise evaluations. Incumbent performs research, development, and design. Directs construction of complete quantum electronic frequency standard systems for actual or potential use as primary frequency standards.

If interested, please obtain information on how to apply from:

Jim Layman  
Area Personnel Officer  
National Bureau of Standards 1-3001  
325 Broadway  
Boulder, Colorado 80303  
Telephone: 303-497-3840

Postdoctoral appointments are also available. An Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.

## POSITIONS OPEN

### DEAN OF SCIENCE AND MATHEMATICS

Nominations and applications are invited for the position of Dean of the College of Science and Mathematics at North Dakota State University. The college consists of the Departments of Biochemistry, Botany, Chemistry, Geology, Mathematical Sciences, Physics, Polymers and Coatings, Psychology, and Zoology. The college offers graduate degrees, including the Ph.D. in most fields. Minimum qualifications are an earned doctorate, teaching and research experience (including graduate thesis advising) which qualify the candidate for a position as professor in one of the college's disciplines, demonstrated leadership skills and experience in academic administration, an established research record, ability to obtain research grant support, and the ability to interact effectively with other members of the university community. The dean is expected to assume duties by 1 July 1981. Applications, including résumés and names of three references, should be received by 9 January 1981. Send materials to: **Dr. Neil S. Jacobsen, Chairman of the Search Committee, P.O. Box 5595, State University Station, Fargo, North Dakota 58105. North Dakota State University is an Equal Opportunity Institution.**

### ELECTRONICS ENGINEER GS-855-14, \$37,871 per annum Full-time Permanent Time & Frequency Division National Bureau of Standards, Boulder, Colorado

Leads research concerning time synchronization and frequency metrology for national and international comparisons at state of the art accuracies. The research involves the NASA tracking and data relay satellite system (TDRSS) and the utilization of communication satellites to do remote clock synchronization.

If interested, please obtain information on how to apply from:

Jim Layman  
Area Personnel Officer  
National Bureau of Standards 1-3001  
325 Broadway  
Boulder, Colorado 80303  
Telephone: 303-497-3840

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

**FACULTY POSITIONS IN BOTANY, MICROBIOLOGY, ZOOLOGY.** Department of Biology, University of Puerto Rico, is seeking applicants with Ph.D. degrees for the following tenure-track positions: **PLANT TAXONOMIST** with training in ecology; **MARINE BIOLOGIST** with broad experience in ecology; **MICROBIAL PHYSIOLOGIST** with ability to develop undergraduate course in industrial microbiology; and **COMPARATIVE ANIMAL PHYSIOLOGIST** with ability to teach endocrinology. These positions involve teaching at the undergraduate and graduate levels and the establishment of active research programs. Departmental and institutional research funding is available and the federal government of the United States accepts grant proposals submitted from Puerto Rico. Knowledge of Spanish is desirable but not essential. Send letter of application stating the position sought, transcripts, recent publications, curriculum vitae, and three letters of recommendation to: **Dr. David Webb, Department of Biology, University of Puerto Rico, Río Piedras, P.R. 00931. Starting date: 1 August 1981. Application deadline: 19 December 1980.**

### PHYSICIST GS-1310-12, \$26,951 per annum Full-time Permanent Time & Frequency Division National Bureau of Standards, Boulder, Colorado

Incumbent will be responsible for a variety of technical problems dealing with the application of precision measurement technology to the measurement of length and related quantities. Works on construction of electromagnetic distance measuring equipment. Requires Ph.D. in physics or equivalent experience in digital electronics, microwave electronics, or related areas.

If interested, please obtain information on how to apply from:

Jim Layman  
Area Personnel Officer  
National Bureau of Standards 1-3001  
325 Broadway  
Boulder, Colorado 80303  
Telephone: 303-497-3840

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

## POSITIONS OPEN

**FACULTY APPOINTMENT.** The Department of Microbiology, College of Medicine, has an opening for an assistant (or possibly associate) professor. Responsibilities include teaching graduate and medical students. Preference will be given to candidates who will develop a strong research program in the control of gene expression or gene organization in prokaryotes, eukaryotes, or viruses. Use of recombinant DNA techniques is especially desirable. Postdoctoral experience is required. Send curriculum vitae and three references to: **Dr. Paul S. Sypherd, Department of Microbiology, University of California, Irvine, College of Medicine, Irvine, Calif. 92717. An Affirmative Action Employer.**

**FACULTY POSITION** in physical chemistry or chemical physics. Applications or nominations are invited for an opening in the Department of Chemistry at Massachusetts Institute of Technology (MIT). Applicants should have demonstrated ability to do outstanding independent research in chemistry and show promise of excellence in teaching. Appointment will probably be at the assistant professor level, but applications and nominations for other levels will be considered. Candidates should submit curriculum vitae, a publications list, a description of research interests, and have three letters of recommendation sent not later than 15 February 1981 to: **Professor J. L. Kinsey, Room 18-399, MIT, Cambridge, Mass. 02139. MIT is an Equal Opportunity/Affirmative Action Employer.**

### FACULTY POSITION AVAILABLE DEPARTMENT OF OPHTHALMOLOGY UNIVERSITY OF PENNSYLVANIA VETERAN'S ADMINISTRATION HOSPITAL PHILADELPHIA, PENNSYLVANIA

Applications are invited for a faculty position at the assistant professor level for the position of **Director of Outpatient Services** at the Veteran's Administration Hospital.

Responsibilities include outpatient clinic, evaluation of Veteran compensation, resident teaching and surgery, and coordination of inpatient activities. As a general rule, only candidates who have had one or more years of post-residency training and/or equivalent experience will be considered. Those interested should direct inquiries, together with up-to-date curriculum vitae and bibliography, to:

Myron Yanoff, M.D.  
Director, Scheie Eye Institute  
Chairman, Department of Ophthalmology  
University of Pennsylvania  
Presbyterian Medical Center  
51 North 39 Street  
Philadelphia, Pa. 19104

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## GENETIC ENGINEERING RESEARCH MANAGER AND PLANNER

Young, aggressive, genetic engineering firm in Cambridge, Mass., seeks highly motivated, resourceful individual to be **chief of scientific operations.** Ongoing responsibilities include research direction, personnel recruitment, and business planning. Position requires technical expertise in recombinant DNA, analytical skill in market assessment, and imaginative ability in product development. Minimum requirements are Ph.D. in molecular biology and several years of postdoctoral research experience. All inquiries dealt with in strictest confidence. Commercial or industrial experience deemed valuable. Qualified applicants encouraged to send résumé and statement of interest to:

Box 292, SCIENCE

### LABORATORY DIRECTOR— DEPARTMENT ADMINISTRATOR Department of Biochemistry, Rice University

Responsibility for the administrative and service operations of the department. Duties will include fiscal management of budgets, personnel management of staff, research administration of grants and contracts. Substantial previous experience in the above areas and a reasonable scientific background are required. Send résumé and three letters of reference to: **Professor George J. Schroepfer, Jr., c/o Jan Griffin, Allen Center, Rice University, Houston, Texas 77001.**

An Equal Opportunity/Affirmative Action Employer

## POSITIONS OPEN

**FACULTY POSITION.** Assistant professor. Invertebrate zoologist, tenure-track. Primary responsibilities: to teach undergraduate course in invertebrate zoology and advanced undergraduate/graduate courses in entomology and parasitology. Supervise undergraduate and graduate research. Ph.D. preferred. Send letter of application, résumé, transcripts, and three letters of reference by 15 January 1981 to: **Thomas R. Manley, Chairperson, Search Committee, Department of Biological and Allied Health Sciences, Bloomsburg State College, Bloomsburg, Pa. 17815.** *Equal Opportunity/Affirmative Action Employer.*

### FACULTY POSITION EPIDEMIOLOGIST/VIROLOGIST

Applications are invited for position of assistant professor, Department of Biomedical and Environmental Health Sciences, School of Public Health, University of California, Berkeley. Position is ladder rank, funded by state budget, and is to develop a teaching and research program on the epidemiology of persistent viral infections associated with degenerative diseases. Academic contact will be with students and staff from the School of Public Health Department of Microbiology and Immunology and the Health and Medical Sciences Program. The Department of Epidemiology and International Health, San Francisco Campus, and the California State Department of Health Services. Research is expected to involve laboratory studies on animal models and/or direct study of human subjects. Applicants should have graduate degree and experience supportive of the appointment level.

*The University of California, Berkeley, is an Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae, transcripts, publications, names and addresses of three references, and a brief statement of your research and teaching interests to:

**Dr. William C. Reeves**  
Department of Biomedical and Environmental Health Sciences  
School of Public Health  
University of California  
Berkeley, California 94720

Application review will begin 1 January 1981.

## POSITIONS OPEN

**MARINE MICROBIOLOGIST.** Position available immediately at Haifa, Israel, for research associate (Ph.D., preferably with experience) to work on primary production and related topics in the eastern Mediterranean. Initial 1- to 2-year contract can lead to tenure post. Send application, curriculum vitae, and three letters of recommendation to: **Professor T. Berman, Israel Oceanographic & Limnological Research, P.O. Box 8030, Haifa, Israel.**

**MICROBIAL ECOLOGIST**—Faculty position, fall 1981. The appointee will be expected to develop an active and distinctive research program and participate in both graduate and undergraduate teaching. Physiological background and postdoctoral experience desirable. Salary negotiable on basis of teaching and research experience. Deadline for receipt of applications: 1 February 1981. Send curriculum vitae, names of four references, and statement of research and teaching interests to: **Dr. W. C. McDonald, Chairman, Department of Biology, The University of Texas at Arlington, Arlington, Texas 76019.** *An Affirmative Action/Equal Opportunity Employer.*

### NUTRITIONAL SCIENTIST

The Department of Biological Chemistry has a tenure-track position available at the assistant professor level. Applications are invited from candidates with a Ph.D. and postdoctoral experience in nutritional sciences with a biochemistry background. The successful candidate will be involved in the continued development of nutrition teaching for medical, graduate, and undergraduate students, and will be expected to develop a vigorous research program. Interaction with other nutritionists in the department, in the university, and in the Dayton area is possible. The successful applicant will be appointed to the faculty of the School of Medicine as well as the College of Science and Engineering. Send curriculum vitae, a brief statement of research plans, and the names and addresses of three references to: **Search Committee, Department of Biological Chemistry, Wright State University, Dayton, Ohio 45435.** Applications will be accepted until 1 March 1981 or until a suitable candidate is located. *Wright State University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### LINGUISTIC ANTHROPOLOGIST

Senior assistant professor or associate professor. Regents funded. Faculty position in University of California, Los Angeles (UCLA) Medical Retardation Research Center.

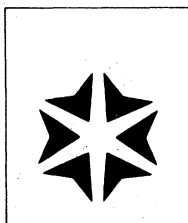
Qualifications include: Ph.D. in linguistic anthropology; demonstrated scholarly productivity and ability to obtain research funding; university-level teaching experience; cross-cultural linguistic research experience and linguistic research experience with mentally retarded persons.

Candidate to teach courses on the following subjects: sociolinguistics, ethnolinguistics, and the communicative competence of the mentally retarded. Candidate's research interests should include studies of the communicative competence of mentally retarded persons.

Send curriculum vitae, publications, and names of three references to: **Professor L. L. Langness, Mental Retardation and Child Psychiatry Division, Neuropsychiatric Institute, UCLA, 760 Westwood Boulevard, Los Angeles, California 90024.**

Deadline for applications is 15 January 1981. *The University is an Equal Opportunity/Affirmative Action Employer.*

**NUTRITION FACULTY POSITION.** Assistant, associate, or full professor; tenure-track, full-time, 12 months. M.D. or Ph.D. in nutrition or related field required; experience in graduate education, evidence of research ability and productivity, and eligibility for American Dietetic Association registration or American Board of Nutrition certification preferred. Salary negotiable; \$20,000 minimum. Responsibilities: undergraduate teaching, including courses in community nutrition; graduate teaching and direction of graduate student research; research in human nutrition and nutrition education, including seeking of research funds; and academic advising and committee work. Position available fall semester 1981; application deadline: 28 February 1981 or until position is filled. Send letter of application and credentials to: **William S. Runyan, Chair, Search Committee, Department of Food and Nutrition, 111 MacKay Hall, Iowa State University, Ames, Iowa 50011.** *An Equal Opportunity/Affirmative Action Employer.*



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# Production & Development Manager *viral vaccines: Canada*

This is an opportunity to join a world-leader in the manufacture of human and veterinary biologicals. It's a role for a "hands on" manager who can combine technical know-how with leadership and motivational skills.

Your life sciences background, encompassing strong academic qualifications, will have given you special insights into virus and/or cell culture technology. This specific skills are essential:

- vaccine manufacture involving the culture of cells and viruses
- the physical and chemical interactions in their cultures
- the development of new technologies for optimizing production systems

Importantly, this detailed know-how will be balanced by a comprehensive perspective of the total manufacturing process.

Location is Toronto area. A competitive salary and benefits program includes relocation assistance.

All communications will be held in strictest professional confidence. Please forward your résumé to establish if there is mutual interest. Refer to File #383.



## POSITIONS OPEN

### FACULTY POSITIONS: Neurophysiology, Pulmonary Physiology University of Oregon Health Sciences Center

The Department of Physiology, School of Medicine, invites applicants for two faculty positions beginning 1 July 1981. Both provide excellent opportunities to develop independent research programs in these areas and to teach medical and graduate students. Doctorate plus postdoctoral experience required. Salaries negotiable. Apply before February 1981 to: **Dr. Alfred J. Rampone, Acting Chairman, Department of Physiology, School of Medicine, University of Oregon Health Sciences Center, Portland, Oregon 97201.**

*An Equal Opportunity/Affirmative Action Employer*

### PHARMACOLOGISTS

Applications are invited for faculty positions in a new Department of Pharmacology at Cornell University. Duties include the teaching of basic and/or clinical pharmacology to veterinary and postgraduate students. Candidates should have the D.V.M., M.D., or Ph.D. degree, should be firmly committed to a career of teaching, and have strong or potentially strong research programs. All areas of pharmacology are being considered in the development of the department. Preferred research interests are in mechanisms of action of pharmacological agents which affect basic cell processes. Applications and three letters of recommendation should be sent to: **Dr. Geoffrey W. G. Sharp, Chairman, Department of Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853. Cornell University is an Equal Opportunity/Affirmative Action Employer.**

### PLANT BIOLOGIST

Section of Plant Biology, Division of  
Biological Sciences, Cornell University

The Division of Biological Sciences is seeking a tenure-track faculty member (preferably an assistant professor) to teach an introductory course in general biology to nonmajors. Applicants must hold a Ph.D. degree in one of the biological sciences and have demonstrated research productivity in an area of plant biology. Postdoctoral research experience is highly desirable as is experience in teaching undergraduates. In addition to teaching the introductory course, the appointee will be expected to develop a vigorous research and graduate training program. Occasional participation in upper-level courses in the appointee's area of interest is expected.

Applications, which should include a description of teaching experience, reprints of research publications, and a statement of future research directions, should be sent to:

**Dr. M. V. Parthasarathy  
Section of Plant Biology  
Room 237 Plant Science Building  
Cornell University  
Ithaca, New York 14853**

Three letters of reference requested by the candidate should also be sent directly to the same address.

Applications should be received not later than 1 February 1981.

*An Equal Opportunity/Affirmative Action Employer*

### POSTDOCTORAL TRAINING

The Department of Pathology, New York State College of Veterinary Medicine, Cornell University, announces openings for postdoctoral training in veterinary pathology. The biphasic program emphasizes competency in anatomic pathology and advanced research training, eventuating in specialty Board-certification by the ACVP and, when appropriate, a Ph.D. in experimental pathology. Preference will be given to applicants with the following areas of specific interest: pathobiology of aging, comparative pathology (Cornell Medical College), laboratory animal pathology, zoo animal pathology, National Cancer Institute Residency Program, clinical pathology. Applications will be accepted through 31 January 1981; notification will take place prior to 31 March 1981. Previous experience in the field is desirable but not mandatory. Starting salary level is approximately \$13,000. Application materials (curriculum vitae and personal bibliography, official college transcripts, three professional references, and brief statement concerning career goals and availability) should be directed to: **Robert M. Lewis, D.V.M., Chairman, Department of Pathology, E205 Schurman Hall, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.**

*Cornell University is an Equal Opportunity/Affirmative Action Educator/Employer.*

## POSITIONS OPEN

The Department of Biomedical Engineering, Duke University, is inviting applications for a **FACULTY POSITION** which will be available in July 1981. Academic rank is open. Applicants should be interested in teaching at both the undergraduate and graduate levels. A major criterion for appointment will be research accomplishments and the demonstrated potential for developing an excellent research program in an area of biomedical engineering. Applicants should send a résumé and names of three references to:

**Howard G. Clark, Chairman  
Department of Biomedical Engineering  
Duke University  
Durham, North Carolina 27706**

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

### INSECT PEST MANAGEMENT Cornell University

Assistant professor, tenure-track position, IPM forage and field crops. Ph.D. with training in fundamentals of arthropod pest management and application of computer technology to IPM delivery systems. Effort distribution 50 percent research, 50 percent extension, in development and implementation of IPM programs in collaboration with interdisciplinary team. Opportunity for teaching may be developed. Send applications by 1 February 1981 to: **Dr. E. H. Smith, Department of Entomology, Cornell University, Ithaca, N.Y. 14853.** Include curriculum vitae, transcripts, and five references. *Cornell University is an Equal Opportunity/Affirmative Action Employer.*

### LABORATORY ANIMAL CLINICIAN AND ASSISTANT DIRECTOR OF DIVISION

Laboratory Animal Clinician, Assistant Director, Division of Laboratory Animal Medicine. Clinical care for laboratory animals; participate in research and teaching programs. Demonstrated experience in an academic environment—that is, teaching background, first author publications. Board-eligibility in ACLAM mandatory; Board-certification in ACLAM desirable. Qualified applicants should submit curriculum vitae with three letters of references to: **Dr. James R. Pick, Director, Division of Laboratory Animal Medicine, University of North Carolina School of Medicine, B-12 Berryhill Hall 219H, Chapel Hill, N.C. 27514.**

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

**MATH/SCIENCE COMPONENT OF GENERAL STUDIES PROGRAM**—Stonehill College, a coeducational, Catholic, liberal arts college with 1750 students and 79 full-time faculty, located on a 618-acre campus 20 miles southwest of Boston, seeks a full-time teacher for the math/science component of a new General Studies Core Curriculum Program to begin on 1 September 1981. Applicants should have primary professional qualifications in history or philosophy of math/science, with a solid background in a mathematical or scientific discipline. Doctorate and teaching experience required. This is a tenure-track position, with rank and salary competitive and commensurate with qualifications and experience. Please submit applications no later than 31 December 1980 to: **Peter Paoletta, Chairman, Search Committee, Stonehill College, North Easton, Mass. 02356.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL APPOINTMENT** now available for studies of the biogenesis, structure, and function of messenger RNA in animal cells. Training either in biochemistry, microbial genetics, or molecular biology desirable. Salary negotiable. Please send curriculum vitae and names of two references to: **Dr. Mary Edmonds, Department of Biological Sciences, 527 Langley Hall, University of Pittsburgh, Pittsburgh, Pa. 15260.** *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION IN BIOCHEMICAL ENDOCRINOLOGY.** To characterize the gonadotropin receptor-adenyl cyclase system in the non-human primate (monkey) ovary and its role in the development, function, and regression of the corpus luteum during normal and infertile menstrual cycle and pregnancy. Expertise in cell biology, biochemistry, and cyclic nucleotide research highly desirable. Available immediately; must be filled by May 1981. Standard NIH training grant stipend. Send résumé, including statement of research plans and the names of three references, to: **Dr. Richard L. Stouffer, Department of Physiology, College of Medicine, University of Arizona, Tucson, Ariz. 85724.** *The University of Arizona is an Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.*

## POSITIONS OPEN

### ACVP-CERTIFIED PATHOLOGIST

The University of North Carolina School of Medicine is seeking to recruit an ACVP-certified pathologist to support teaching and service programs and to conduct independent research. Appointments include director of the Division of Comparative Pathology and associate director of the Division of Laboratory Animal Medicine. Academic appointment in the Department of Pathology will be as assistant professor or associate professor, commensurate with background and experience. Research efforts in the areas of oncology, particularly tumor immunopathology, and/or pulmonary pathology would complement the interests of other faculty members. Interested individuals should submit complete curriculum vitae and three letters of reference to:

**Dr. Joseph W. Grisham, Chairman  
Department of Pathology  
University of North Carolina School of Medicine  
Chapel Hill, N.C. 27514**

*An Equal Opportunity/Affirmative Action Employer*

### PLANT POPULATION BIOLOGIST

The Department of Biology, Virginia Polytechnic Institute and State University (VPI & SU), invites applications for a tenure-track position at the assistant professor level to begin 1 September 1981. Postdoctoral or other relevant experience is desirable. The successful candidate will be expected to develop an active research program in plant population ecology, offer a graduate course in population dynamics emphasizing quantitative approaches, and offer training to undergraduate students in basic ecology and botany. Salary is competitive and commensurate with experience. A letter of application, curriculum vitae, a brief description of career goals and proposed research program, and the names, addresses, and telephone numbers of three referees must be received by 1 February 1981. Address to: **Dr. W. Carter Johnson, Chairman, Search Committee, Department of Biology, VPI & SU, Blacksburg, Va. 24061.**

*An Equal Opportunity/Affirmative Action Employer*

### POLAR OCEANOGRAPHER/ SEA ICE DYNAMICIST

A position is available under the Intergovernmental Personnel Act of 1970 for persons now employed in state/local government or in colleges and universities. This position is located within the Oceanic Processes Branch of the Environmental Observation Division of the Office of Space and Terrestrial Applications, NASA Headquarters. The position is for 1 year, with the possibility for renewal for an additional year. Pay will be at a level commensurate with experience and will be established after a review of qualifications.

Candidates must have been employed by the university in a permanent position for at least 90 days or be a career employee of a state or local government. Candidates must also meet the federal qualification standards for the position. These are as follows: a degree in an appropriate field of science, plus 3 years of progressively responsible experience in duties related to the position.

This individual will be responsible for planning, developing, and implementing a scientific research program in satellite remote sensing of oceanic processes in polar regions. A background in polar oceanography, sea ice dynamics, or a closely related field is required; experience in remote sensing, although desirable, is not essential. A Ph.D. or equivalent training and experience is mandatory.

Interested parties should send a current résumé to: **NASA Headquarters, attention: Sarah Keegan, Code EPM-3, Washington, D.C. 20546.**

*Selection for this position will be made from otherwise eligible candidates without discrimination for any nonmerit reason such as race, color, religion, sex, national origin, politics, marital status, physical handicap, age, membership or nonmembership in an employee organization, or personal favoritism.*

**POSTDOCTORAL**, on NIH training grant, Cancer Research Laboratory. Studies of the role of basement membrane components in growth and differentiation of normal and malignant mammary epithelial cells on collagen substrates. Requires strong background in biochemistry and/or cell biology. Opportunity to acquire expertise in cell culture, tumor biology, ultrastructural methods. Contact: **Dr. Dorothy Pitelka, Cancer Research Laboratory, 230 Warren Hall, University of California, Berkeley, Calif. 94720.** *An Equal Opportunity/Affirmative Action Employer.*

**NRL**

## **ELECTRONICS ENGINEERS RESEARCH PHYSICISTS CHEMISTS**

The Naval Research Laboratory, Optical Science Division offers career opportunities with an agency that notices the full range of work from basic and applied research to equipment development to increase the combat effectiveness of the fleet.

### **ELECTRONICS ENGINEER/RESEARCH PHYSICIST**

(GS-13 or GS-14)\* \$32,048 to \$49,229

#### **Electro-Optical Systems Development Group**

Develops electro-optical systems concepts (covering the entire range of potential electro-optics technology and including, in part, guidance and control, imaging, weaponry, signal processing surveillance, communications, antisubmarine warfare, and countermeasure applications) and manages the progress of these electro-optical systems concepts through the advanced and engineering development stages. Responsibilities include modelling of electro-optical systems and, as well, participation in working groups on the development and deployment of electro-optical systems; foreign technology forums; NATO panels, etc.

\*Candidates for two staff vacancies at the GS-12 level (\$26,951 to \$35,033) are also being interviewed.

### **RESEARCH PHYSICIST**

(GS-13) \$32,048 to \$41,660

#### **Optical Techniques for Information Processing Section, Applied Optics Branch**

Performs experimental and theoretical research on new optical processing techniques which will permit the manipulation of data from radar, sonar, electronic warfare, and optical sensor systems. The candidate will have responsibilities which include addressing problems involving the definition of Navy system data handling requirements; the development of new and/or the application of unestablished mathematical techniques; and the fabrication of optical and electronic devices required to implement data processing functions.

### **RESEARCH PHYSICIST OR CHEMIST**

(GS-12) \$26,951 to \$35,033

#### **Molecular/Biophysical Optics Section, Optical Probes Branch**

Performs research using Raman, Brillouin, and time-resolved spectroscopic techniques to probe complex material systems. On-going areas of research include high pressure studies of polymers using Brillouin to monitor viscoelastic properties and Raman to monitor conformational changes; the effect of temperature and pressure of stability of liquid monopropellants; spectroscopy of surfaces; the effect of electromagnetic radiation on materials of biological significance; and optical characterization of complex biological materials.

NRL's 130 acre main site is located just 6 miles from Washington, D.C.'s central business district along 1/2 mile of the Potomac River waterfront. Public transportation and the interstate highway system provide easy access to the central city's business and residential areas. In addition NRL offers ample free parking and its unique location is just 15 to 20 minutes from Maryland and Virginia's prime residential areas.

These are Career positions in the Federal Service. Please submit a Personal Qualifications Statement (SF-171) or detailed resume prior to 15 January 1981 to:

**NAVAL RESEARCH LABORATORY  
CIVILIAN PERSONNEL OFFICE  
4555 Overlook Avenue, S.W.  
Washington, D.C. 20375  
Code: 6500-1-13 S**

An Equal Opportunity Employer

U.S. Citizenship Required

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS** available in the Department of Microbiology, College of Medicine, University of California, Irvine. Areas of study include: the mechanism and genetic basis of inducible tetracycline resistance encoded by the transposable element Tn10, emphasizing recombinant DNA and DNA sequencing approaches; the role of the cell surface membrane in the control of animal cell proliferation; posttranslational modification of proteins; mechanisms employed by eukaryotic cells in regulating gene expression; serological and genetic structure of rat immunoglobulins, using hybridoma antibodies and DNA cloning. Applicants must have a Ph.D. and a background in the quantitative aspects of biochemistry, microbiology, or genetics. Stipends are provided from several sources, including research and training grants. Send curriculum vitae and the names of three references to: Dr. Paul S. Sypherd, Department of Microbiology, College of Medicine, University of California, Irvine, California 92717. An Affirmative Action Employer.

### POSTDOCTORAL

Postdoctoral positions in membrane biology to study the relationship between enzyme diffusion and catalytic activity in natural and reconstituted membranes using liposome-membrane fusion, differential scanning calorimetry, dual wavelength-dual beam spectrophotometry, and freeze-fracture electron microscopy. Send curriculum vitae, a brief description of current research interests, and names of three references to: Dr. Charles R. Hackenbrock, Chairman, Department of Anatomy, Laboratories for Cell Biology, School of Medicine, University of North Carolina at Chapel Hill, 111 Swing Building 217H, Chapel Hill, N.C. 27514.

**POSTDOCTORAL POSITIONS—BIOPHYSICISTS and BIOCHEMISTS** to study the mechanism and regulation of gene expression, nucleic acid-protein interactions, and chemical carcinogenesis. Excellent facilities. Experience in fluorescence spectroscopy, fast kinetics, molecular biology, or genetic engineering desirable, but not essential. Send curriculum vitae and three letters of recommendation to: Professor C.-W. Wu, Department of Pharmacological Sciences, State University of New York at Stony Brook, Long Island, N.Y. 11794. An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available spring 1981 in population biology and genetic systems of ferns. Applicants should have experience in starch gel electrophoresis of plant systems, with background in genetics, statistics, and biochemistry. Send inquiries or curriculum vitae and three references to: Dr. Robert M. Lloyd, Department of Botany, Ohio University, Athens, Ohio 45701. An Affirmative Action/Equal Opportunity Employer.

Several **POSTDOCTORAL POSITIONS** are available to study cellular regulation by  $Ca^{2+}$  and cyclic nucleotides (J. H. Wang), structure and function of regulatory proteins (F. C. Stevens), and phospholipid metabolisms and membrane bound enzymes (P. Choy). Apply by sending curriculum vitae and by arranging for two recommendation letters to be sent to the appropriate individual at: Department of Biochemistry, Faculty of Medicine, University of Manitoba, Winnipeg, Manitoba, Canada R3E 0W3.

**POSTDOCTORAL POSITIONS** available spring, summer, or fall for a combined spectroscopic, kinetic, and enzymatic study of the structure and thermodynamics of drug-nucleic acid complexes. I am particularly interested in individuals with experience in either the synthesis of oligonucleotides or a background in spectroscopy, although all applicants will be given serious consideration. State-of-the-art instrumentation is available to support these projects (for example, 400 MHz, NMR, computer interfaced Cary 219, and Jasco CD). Candidates should forward curriculum vitae, transcripts, and three letters of recommendation to: Professor Thomas R. Krugh, Department of Chemistry, University of Rochester, Rochester, N.Y. 14627; telephone: 716-275-4224.

**POSTDOCTORAL RESEARCH ASSOCIATE POSITION** in genetics available 1 December for 1 to 2 years to study cytoplasmic genetics and to apply molecular genetic techniques to the analysis of somatic hybrid plants using *Nicotiana*. Experience in the analysis of organelle DNA and/or plasmid genetics is required; familiarity with plant tissue culture experimentation is helpful. Rutgers University-Campbell Institute for Research and Technology, Somatic Cell Genetics Program. Send curriculum vitae and three letters of recommendation to: David A. Evans, 2611 Branch Pike, Cinnaminson, New Jersey 08077. An Equal Opportunity Employer

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available to conduct research in the general areas of the mechanisms of action of insulin, glucocorticoids, and cAMP. Potential projects will emphasize the use of recombinant DNA technology. Send curriculum vitae and the names of three references to: Dr. Daryl Granner, Director, Diabetes and Endocrinology Research Center, University of Iowa, Room 3E-50, Veterans Administration Hospital, Iowa City, Iowa 52240. The University of Iowa is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION, PLANT PHYSIOLOGY/BIOCHEMISTRY**, available immediately to study the mechanism and control of photorespiratory glycolate synthesis and metabolism. Experience in photosynthesis or plant tissue culture desirable. Send résumé and two letters of recommendation to: Dr. David J. Oliver, Department of Bacteriology and Biochemistry, University of Idaho, Moscow, Idaho 83843.

### POSTDOCTORAL AND PREDOCTORAL POSITIONS IN IMMUNOLOGY

Available immediately in the Division of Research Immunology and the Immunology Graduate Group at the University of Pennsylvania and the Wistar Institute. Research training programs are centered on an interactive community of individuals doing research in the general areas of molecular and cellular immunology, immunogenetics, and tumor and viral immunology. Specific research projects include considerations of cell-cell interactions, the structure and function of MHC gene products, origins of antibody diversity, analysis of T cell receptors, and immune defense mechanisms against viral pathogens. Training grant support is available. Please send curriculum vitae and three references to: Dr. Darcy B. Wilson, Division of Research Immunology, Department of Pathology, University of Pennsylvania School of Medicine, Philadelphia, Pa. 19104.

### POSTDOCTORAL RESEARCH ASSOCIATE

Seek recent Ph.D. to join physical chemistry program around January 1981; to study the properties of active oxygen species (superoxide radical, hydroxyl radical, and singlet molecular oxygen). Interested candidates should send résumé to: Dr. B. Bielski, Chemistry Department, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, N.Y. 11973. An Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH POSITION** in psychology. To study psychopharmacology, disorders of sleep, and gerontology; experience in sleep research required; experience in pharmacology, psychopathology, or aging helpful; 2-year appointment, starting January 1981; \$14,000 to \$16,000. Send curriculum vitae, including research goals and three letters of reference, to: Dr. Michael Bonnet, Sleep Laboratory, 116 A1, VA Hospital, 3200 Vine Street, Cincinnati, Ohio 45220.

### POSTDOCTORAL RESEARCH TRAINING

positions are available in the areas of endocrinology, metabolism, and diabetes under the guidance of one of ten training faculty in six basic or clinical departments of Emory University School of Medicine. Ph.D. or M.D. graduates interested in advanced research and training in basic and clinical endocrinology and metabolic disorders for 1 or 2 years should send curriculum vitae, area of research interest, and names of two references to:

Dr. Mario DiGirolamo  
Program Director  
Emory University School of Medicine  
69 Butler Street  
Atlanta, Georgia 30303

Deadline for applications is 15 February 1981 with awards being made by 31 March 1981. An Equal Opportunity/Affirmative Action Employer.

**PROFESSOR OF PHYSIOLOGICAL OPTICS.** The Ohio State University (OSU), College of Optometry, with its graduate program in physiological optics, has an opening for a Ph.D. vision scientist of outstanding caliber. An effective teacher and active and recognized researcher is desired. The salary depends on productivity, relevance, and potential. Send curriculum vitae, bibliography, and names of three references to: Chairman, Search Committee, OSU College of Optometry, 338 West 10 Avenue, Columbus, Ohio 43210. OSU is an Affirmative Action/Equal Opportunity Employer.

## POSITIONS OPEN

**POSTDOCTORAL (RESEARCH ASSOCIATE)** positions available 1 January 1981 to work on: (i) the cloning and characterization of meiosis-specific and/or sporulation genes of yeast, and (ii) the isolation and characterization of genes which are essential for disease expression in selected plant pathogenic pseudomonads. Salary: \$14,000 per year, each; continuing support possible. Experience in nucleic acid isolation, hybridization, and cloning desirable. Application deadline: 19 December 1980 or until filled. Send curriculum vitae and three letters of recommendation to: Dr. Dallice Mills, Department of Botany and Plant Pathology, Oregon State University, Corvallis, Ore. 97331. Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.

Vanderbilt University School of Medicine seeks qualified candidates for the position of **PROFESSOR AND CHAIRPERSON** of the Department of Physiology. Interested candidates are encouraged to submit their credentials in research, administration, and teaching and a copy of their curriculum vitae to: Dr. John G. Coniglio, Chairman, Physiology Search Committee, Department of Biochemistry, Vanderbilt University, Nashville, Tennessee 37232, by 31 January 1981. Vanderbilt University is an Affirmative Action/Equal Opportunity Employer.

**PROFESSOR AND HEAD, Department of Radiology and Radiation Biology**, College of Veterinary Medicine and Biomedical Sciences, Colorado State University (CSU). Applicants must possess the Ph.D., D.V.M., or M.D. degree, have shown distinguished achievement in research and teaching in radiology, radiation biology and/or health physics, and have demonstrated evidence of administrative leadership. Salary negotiable. Deadline for receipt of applications: 1 February 1981. CSU is an Equal Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Services Building. Send curriculum vitae and names and telephone numbers of three references to: Dr. J. H. Venable, Department of Anatomy, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, Colorado 80523.

**PUBLIC RELATIONS OFFICER**—Astronomical Research; Tucson, Arizona. Kitt Peak National Observatory, which provides observational facilities for infrared and optical astronomers on the national level, is looking for a successful, innovative individual as public relations officer. Under the general direction of the Observatory director, he/she will be responsible for all public relations activities of the Observatory. The successful candidate should possess a basic knowledge of astronomy and a familiarity with other astronomical research institutions. A master's degree in the physical sciences is desirable. Experience in scientific writing and public relations is essential. Kitt Peak is an Equal Opportunity/Affirmative Action Employer and offers liberal benefits including 24 days annual vacation, comprehensive insurance plans, and fully vested retirement after 1 year. Please send résumé and salary history to: Dr. Geoffrey Burbidge, Director, KITT PEAK NATIONAL OBSERVATORY, P.O. Box 26732, Tucson, Ariz. 85726.

### RESEARCH ASSISTANT PROFESSOR OF MEDICINE

A full-time physician researcher to participate in clinical chemotherapy and pharmacology studies of new anticancer drugs in the Department of Medicine and the Vermont Regional Cancer Center starting 1 July 1981. Must have demonstrated ability to attract independent research funding. Send curriculum vitae to: Irwin H. Krakoff, M.D., Director, Vermont Regional Cancer Center, University of Vermont, 1 South Prospect Street, Burlington, Vermont 05401.

An Affirmative Action Employer. Women and minorities are encouraged to apply.

**RESEARCH ASSOCIATE IN THEORETICAL ATOMIC PHYSICS.** Research on theoretical atomic physics related to high temperature astrophysical plasmas. Minimum requirements are Ph.D. in physics and demonstrated ability to perform state-of-the-art computations of radiative and collisional processes involving highly stripped ions. Salary range: \$18,000 to \$20,000 for full-time, 12-month continuing appointment, to start as soon as possible. Qualified applicants send résumé, references, and list of publications to: Dr. Richard McCray, Joint Institute of Laboratory Astrophysics, University of Colorado, Boulder, Colo. 80309. This is an Affirmative Action/Equal Opportunity Institution.

**ASSISTANT PROFESSOR IN NEUROBIOLOGY** to conduct active independent research program in mammalian neuroanatomy and neurophysiology. Applicants should send curriculum vitae, a statement of research interests, and names of references to: **Dr. Donald J. Woodward, Neurobiology Search Committee, Department of Cell Biology, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235.**

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

## ASSOCIATE DIRECTOR CORPORATE SPONSORED RESEARCH

We are seeking an experienced manager who will report to the Director of Research and Project Administration, by identifying specific interests of corporations as these relate to faculty interest and university projects.

A B.S. degree in engineering or sciences is preferred. Must be experienced in proposal preparation and familiar with corporate research and development activities. Send résumé to:

**DOROTHY SCHUCH  
PERSONNEL SERVICES  
CLIO HALL—S**



## Princeton University

**PRINCETON, NEW JERSEY 08544**

**An Equal Opportunity/Affirmative  
Action Employer**

### Marine Microbiologist

Will participate in teaching and research in developing graduate and undergraduate program in marine biology. Must have post-doctoral experience. Particularly interested in individual with interest in problems of pollution and marine coastal environments. Rank open; salary and benefits competitive. Position available September 1981.

Send curriculum vitae, summary of research interests, and names and addresses of three references to: **Dr. John A. Freeberg, Chairman of Search Committee, Department of Biology,**



**University of  
Massachusetts  
at Boston**

**Harbor Campus  
Boston, Mass. 02125**

*An Equal Opportunity/  
Affirmative Action/  
Title IX Employer*

## SENIOR SCIENTISTS

**NUCLEIC ACID ENZYMOLOGY.** Purification and characterization of new DNA and RNA modifying enzymes and restriction enzymes. Ph.D., extensive post-doctoral experience.

**EUKARYOTIC MOLECULAR BIOLOGY.** RNA isolation, in vitro translation synthesis of gene specific probes, solution hybridization, biochemical aspects of cloning. Ph.D. in biochemistry, post-doctoral experience.

**APPLIED MICROBIOLOGIST.** Experienced with phage infected systems. Some background in large scale fermentation, enzymology and analytical microbiology would be advantageous. Ph.D. in Fermentation Technology or applied microbiology. Well developed management skills.

Please send your resume/C.V., in confidence, to:

**Personnel Director, Dept. S  
Bethesda Research Laboratories  
P.O. Box 577  
Gaithersburg, Maryland 20760  
(A suburb of Washington, D.C.)**



**An Equal Opportunity Employer, M/F/H**



## POSITIONS OPEN

### NATIONAL SCIENCE FOUNDATION

National Science Foundation (NSF), Division of Science Education Resources Improvement, is seeking candidates for a 2-year rotational appointment as **PROGRAM DIRECTOR** for the Resource Centers for Science and Engineering Program. The program is designed to promote increased participation in science and engineering by minorities and persons from low-income families. Projects are geographically dispersed and designed to carry out a variety of regional activities at all educational and community levels. Responsibilities include directing program activities and 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. This position is excepted from the competitive service at the EC-14/EP level (equivalent to the GS-14/15), \$37,871 to \$50,112.50 per annum. Salary is negotiable, based on qualifications and experience. Candidates should have a Ph.D. or its equivalent in a 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 résumés to: **National Science Foundation, Personnel Administration Branch, Room 212, EX 81-7, 1800 G Street, NW, Washington, D.C. 20550, attention: E. Paul Broglio**, by 15 January 1981. For further information, telephone: **202-357-7840**. Applicants who applied under EMPB-80-38 will continue to receive consideration and need not reapply. *NSF is an Equal Opportunity Employer.*

### NATIONAL SCIENCE FOUNDATION

National Science Foundation (NSF), Division of Science Education Resources Improvement, is seeking a qualified person who is interested in spending 1 to (preferably) 2 years at the National Science Foundation during 1981-1983 as a **PROGRAM MANAGER** in the Comprehensive Assistance to Undergraduate Science Education (CAUSE) Program. The program is designed to strengthen the undergraduate science instructional capabilities of colleges and universities. A CAUSE program manager's responsibilities consist of participation in program planning and development, preparing, and carrying out proposal evaluation plans, and recommending funding actions. This position is excepted from the competitive service at the EC-13/14 level (equivalent to the GS-13/14) \$32,048 to \$49,229 per annum. Salary is negotiable based on qualifications and experience. Applicants should have a Ph.D. or its equivalent in a biological, engineering, or social science field, and at least 5 years of recent college teaching experience, preferably in a 2-year or community college. Prior experience as an NSF Science Education proposal reviewer and participation in a CAUSE grant is desirable but not necessary. Submit résumé to: **National Science Foundation, Personnel Administration Branch, Room 212, EX 81-8, 1800 G Street, NW, Washington, D.C. 20550, attention: E. Paul Broglio**. For further information, telephone: **202-357-7840**. Deadline for receiving résumé is 15 January 1981. *NSF is an Equal Opportunity Employer.*

### NATIONAL SCIENCE FOUNDATION

National Science Foundation (NSF), Division of Science Education Resources Improvement, is seeking a qualified person who is interested in spending 1 to (preferably) 2 years at the National Science Foundation during 1981-1983 as a **PROGRAM MANAGER** in the Instructional Scientific Equipment Program. The program facilitates new or improved undergraduate instructional programs by providing grants to colleges and universities to purchase scientific instructional equipment. The program manager's responsibilities consist of participation in program planning and development, preparing, and carrying out proposal evaluation plans, and recommending funding actions. This position is excepted from the competitive civil service at the EC-13/14 level (equivalent to the GS-13/14), \$32,048 to \$49,229 per annum. Salary is negotiable based on qualifications and experience. Applicants should have a Ph.D. or its equivalent in any field of chemistry, physics, or engineering, but preference will be given to engineering. A minimum of 5 years of recent teaching experience at a college or university is also required. Prior experience as an NSF Science Education proposal reviewer and participation in an ISEP grant is desirable but not necessary. Submit résumé to: **National Science Foundation, Personnel Administration Branch, Room 212, EX 81-9, 1800 G Street, NW, Washington, D.C. 20550**, by 15 January 1981. For further information, telephone: **E. Paul Broglio at 202-357-7840**. *NSF is an Equal Opportunity Employer.*

## POSITIONS OPEN

**RESEARCH ASSISTANT.** Experienced life sciences research assistant to work in a medical research laboratory. Major responsibilities are development of new drug assay procedures, supervision of laboratory personnel, and coordination of laboratory activities. Other duties include analysis of drug concentrations in biological fluids using existing procedures, digital computer analysis, and small animal surgery. Expertise in the following techniques is essential: HPLC, GC, TLC, extraction of biological fluids with organic solvents, spectrophotometry, spectrophotofluorometry, radioisotope methodology, digital computer analysis. The person must be able to work independently. B.S. in biology, chemistry, or biochemistry with at least 5 years of applicable experience is preferred, but equivalent education or experience is acceptable. Annual salary is \$18,902.

Send curriculum vitae and supporting letters to: **James Peters, California Employment Development Department, 297 West Hedding Street, San Jose, Calif. 95110**. Deadline for applications is 3 January 1981.

**RESEARCH BIOCHEMIST.** A position is available to study heme metabolism. Minimum requirements include a doctorate in biochemistry and extensive experience as reflected by publications with perfusion of liver, cell culture, sub-cellular fractionation, porphyrins, and drug metabolism. Familiarity with radiochemical, spectroscopic, chromatographic, and immunologic techniques is also required. Salary: \$13,380 to \$16,450. Send résumé and references to: **Department of Biochemistry, attention: Dr. W. T. Morgan, Louisiana State University Medical Center, New Orleans, La. 70112**. *An Equal Opportunity/Affirmative Action Employer.*

### RESEARCH SCIENTIST

Battelle, Pacific Northwest Laboratories at Richland, Washington, invites applications from **AQUATIC PHYSIOLOGISTS/ECOLOGISTS**. Applicants should have a Ph.D., a minimum of 5 years of progressive experience in physiological aspects of pollution biology, and a sound publications record. Formal training in systems ecology is desirable. It is essential the applicant have familiarity in handling organisms across the several trophic levels of typical aquatic ecosystems.

The work will be highly interdisciplinary in nature, involving extensive collaboration with descriptive biologists, chemists, toxicologists, and systems ecologists. Experimentation is planned in the areas of food chain transfers and systems impact measurement.

The position is designed for an established scientist and will allow for significant growth in research and/or project management responsibilities.

U.S. citizenship is required.

Send curriculum vitae, publications list, and names of three references to: **Loren P. Henderson, BATTLE-NORTHWEST, P.O. Box 999, Richland, Wash. 99352**.

*An Equal Opportunity Employer, M/F*

### RESEARCH TECHNICIAN

Position available for research technician to investigate the molecular aspects of erythroid differentiation. Applicant should possess a master's degree with a minimum of 9 years of laboratory experience with proven ability to work independently (scientific publications). Position requires experience in recombinant DNA techniques (plasmid purification, restriction analysis, DNA sequencing), DNA-RNA hybridization, kinetics in solution and on filters, isolation and purification of nucleic acids and reverse transcriptions, in vitro gene transcription. Experience in tissue culture techniques (cell cloning, cell fusion) is also required. Starting salary: \$12,000. Send résumé, including publications and three references, to: **P.O. Box 13086, Philadelphia, Pa. 19104**. *Equal Opportunity Employer.*

### WILDLIFE ECOLOGIST

Assistant professor, Ph.D., tenure-track position beginning 15 August 1981. Responsibilities include participation in wildlife curriculum within the Department of Zoology, developing a research program, and teaching wildlife management and specialty courses. Send letter stating future teaching interests and research plans, curriculum vitae, reprints, and three letters of recommendation to: **Dr. Andrew T. Smith, Wildlife Search Committee, Department of Zoology, Arizona State University, Tempe, Ariz. 85281**. Deadline: 15 February 1981.

*Affirmative Action/Equal Opportunity Employer*

## CONFERENCE

### SCIENTIFIC DIRECTOR FOR CANCER RESEARCH

AMC Cancer Research Center and Hospital seeks a director to administer and lead its clinical and basic science research programs. Responsibilities will include preparation and administration of budget, and personnel and facility planning. The successful candidate, who may be either an M.D. or Ph.D., should have recent or current experience in his/her own active research program and should have experience in managing such projects. Experience in federal grantsmanship is highly desirable. The successful candidate will have discretion for the development of new projects and termination of current ones.

Interested candidates will provide curriculum vitae and three confidential references and will document a successful research career including laboratory-based, clinically relevant research. The candidate must provide clear evidence of leadership capability and must meet the qualifications for a senior faculty appointment at the University of Colorado Health Sciences Center.

AMC offers a salary competitive to a medical school senior faculty member, housing assistance, competitive perquisites (insurance, pension, vacation, sabbatical leave, moving expense, a negotiable initial contract, and an annual salary review keyed to performance). Initial support for the research of the candidate is negotiable.

The position will be open 1 July 1981 and applications will be reviewed 15 January 1981. Please submit requisite information to: **President, AMC Cancer Research Center and Hospital, 6401 West Colfax Avenue, Lakewood, Colorado 80214**. *An Equal Opportunity Employer.*

**SENIOR PEDIATRIC ANATOMIC PATHOLOGIST**—St. Christopher's Hospital For Children and Temple University School of Medicine invite applications for the position of **associate pathologist**. St. Christopher's Hospital For Children and **professor of pathology** (in pediatrics), Temple University School of Medicine. Candidates must meet the requirements of full professorship and must demonstrate an outstanding record in teaching sophomore pathology, and in teaching, research, and service in general pediatric anatomic pathology and perinatal pathology. A record of participation in national and international pediatric pathology organizations and Board-certification in anatomic pathology are required. A special interest in sudden infant death syndrome is preferred. Curriculum vitae may be submitted to: **Director, Department of Anatomic Pathology, St. Christopher's Hospital For Children, 2600 North Lawrence Street, Philadelphia, Pa. 19133**. *Equal Opportunity/Affirmative Action Employer.*

### THEORETICAL ASTROPHYSICS

#### Faculty Position

**Washington University: McDonnell Center for the Space Sciences**

Applications are invited from candidates for a tenure-track position in theoretical astrophysics in the Department of Physics. Preference will be given to candidates whose research interests lie in the areas of gravitational theory and/or galactic astrophysics. While our initial preference is to make an appointment at the assistant professor rank, exceptionally well-qualified applicants for more senior positions will also be considered. For an assistant professorship preference will be given to candidates who have had at least 2 years of postdoctoral experience. Brochures describing the activities of the McDonnell Center and the Department of Physics are available upon request. Inquiries and applications, including the names of at least three referees, should be addressed to: **Professor M. W. Friedlander, Department of Physics, Washington University, St. Louis, Mo. 63130**. *Washington University is an Equal Opportunity/Affirmative Action Employer.*

### VICE CHANCELLOR FOR HEALTH SCIENCES AND DEAN, SCHOOL OF MEDICINE UNIVERSITY OF CALIFORNIA, SAN DIEGO

Applications and nominations are invited for the position of Vice Chancellor for Health Sciences and Dean, School of Medicine, University of California, San Diego (UCSD). The Search Committee is seeking candidates with distinguished academic backgrounds and scholarship who have demonstrated leadership and academic administrative abilities. Applications and nominations should be submitted before 23 January 1981 to: **Lewis L. Judd, M.D., Chair, Search Committee, UCSD School of Medicine (M-003), La Jolla, California 92093**.

*The University of California, San Diego, is an Affirmative Action/Equal Opportunity Employer.*

## CSIRO

RESEARCH SCIENTIST/SENIOR  
RESEARCH SCIENTIST  
DIVISION OF HORTICULTURAL RESEARCH  
MERBEIN, VICTORIA, AUSTRALIA

CSIRO has a broad charter for research into primary and secondary industry areas. The Organization has approximately 7400 employees, 2500 of whom are research and professional scientists, located in divisions and sections throughout Australia.

**FIELD:** Breeding systems of horticultural tree crops.

**GENERAL:** The division is concerned with research on a range of horticultural plants, including sub-tropical and tropical fruit and nut species and grapevines. Emphasis is placed upon the development of new techniques for the selection and breeding of superior plant types and on understanding the complex interaction between plant performance and the environment. Research on plant physiology, biochemistry, and cytology relates to photosynthesis, chloroplast biogenesis, salinity, plant regeneration in vitro, and reproduction.

**LOCATION:** The division has laboratories at Adelaide, South Australia (headquarters), and Merbein, Victoria. The successful applicant will be located in Merbein.

**DUTIES:** Investigations into the breeding systems of a range of tree crops in Australia. Field and laboratory studies of the physiology and anatomy of pollen-pistil relationships including the importance of insect pollinators. Investigations into mechanisms of overcoming outcrossing.

**QUALIFICATIONS:** Ph.D. in botany, horticulture, or agriculture, with specialist training in plant physiology, plant anatomy, or plant breeding. Experience of research in pollination and/or fruit development would be desirable.

**SALARY:** Research scientist/senior research scientist: A\$17,331 to A\$25,177 per annum

**TENURE:** Indefinite with superannuation.

**APPLICATIONS:** In writing and stating full personal and professional details, the names of at least two referees, and quoting reference number A2996, should reach: The Chief, Division of Horticultural Research, CSIRO, G.P.O. Box 350, Adelaide, South Australia 5001, Australia, by 5 January 1981.

# NRL

## THE NAVAL RESEARCH LABORATORY ELECTRONIC TECHNOLOGY DIVISION

is seeking a

### RESEARCH PHYSICIST

GS-12, \$26,951 to \$35,033 per annum

(Salary dependent upon qualifications and experience)

Conducts research in the fabrication and evaluation of Josephson devices prepared using refractory thin films and the optimization of the characteristics of these devices as microwave and millimeter wave radiation detectors.

A B.S. degree in physics or other appropriate discipline plus three years of professional experience is required. Applicants should have knowledge of the deposition of refractory superconducting films, familiarity with the fabrication of electronic devices with dimensions less than one micrometer, and knowledge of the determination of performance characteristics of conventional and superconducting mixers and detectors at frequencies greater than 30 Gigahertz.

This position is in the Federal Career Service with all Civil Service benefits. Interested applicants should submit a Personal Qualifications Statement (SF-171) or detailed resume, prior to December 31, 1980 to:

Naval Research Laboratory  
Civilian Personnel Office  
Attention: 68-045-11 S  
4555 Overlook Avenue, S.W.  
Washington, D.C. 20375

An Equal Opportunity Employer

U.S. Citizenship Required

## MOLECULAR DIAGNOSTICS

### HYBRIDOMA/CLINICAL IMMUNOLOGY

The Molecular Diagnostics Division of BRL currently has available several position, at B.S., M.S., and Ph.D. levels, within our Hybridoma/Clinical Immunology Unit.

An immunology background, with an emphasis on cell surface or viral antigens, or immunochemistry is required, and hybridoma experience is desired.

Qualified applicants should send their resumes or C.V.'s and other pertinent material to:

Personnel Director, Dept. S  
Bethesda Research Laboratories,  
P.O. Box 577  
Gaithersburg, Maryland 20760  
(A suburb of Washington, D.C.)

# BRL

An Equal Opportunity  
Employer, M/F/H

## OFFICE OF NAVAL RESEARCH

### TECHNOLOGY DIRECTORATE DEPUTY DIRECTOR, TECHNOLOGY PROGRAMS

The Technology Directorate manages the overall ONR exploratory development program in basic and applied research, exploratory development, and studies and analyses applicable to Navy and Marine Corps operations. The Deputy Director, Technology Programs establishes overall policy and administrative procedures of the Technology Directorate. He/She plans, develops and evaluates the ONR Exploratory Development Plan.

Candidates should possess a Ph.D. or its equivalent experience in the physical or engineering sciences with specialized experience in technology base efforts and management directed to the solution of specific development problems.

This is a senior Executive Service (SES) position. Salary is dependent upon qualifications.

Interested persons should send a Standard Form 171 Personal Qualifications Statement (available at Federal Job Information Offices) by 15 January 1981 to:

Office of Naval Research  
Personnel Services Division  
800 N. Quincy Street  
Arlington, Virginia 22217

Announcement #80-94 S  
(202) 696-4705

An Equal Opportunity Employer

U.S. Citizenship Required

## POSITIONS OPEN

### SENIOR MARINE BIOLOGIST

This position is available in the Anchorage office of an international consulting organization. Responsibilities include directing Alaskan marine biological efforts. Broad interests needed with strengths in fisheries. Northern experience is not required; but, one must show successful adaption to new situations and demonstration of innovative thinking towards providing useful solutions to complex problems.

Substantial professional support is available in physical oceanography, coastal geology, coastal engineering, and hydraulics, as well as a group of more than 20 biologists.

Qualifications of applicants should include a research doctorate and at least several years of experience in a research or consulting organization.

Very competitive (and negotiable) salary, cost-of-living allowance for Alaska, fully paid medical and life insurance, and relocation expense reimbursement provided; opportunity for annual bonuses. Internally provided funding for applied research is available on a competitive basis.

Apply to:  
Box 291, SCIENCE

### FAIRCHILD TROPICAL GARDEN

**TROPICAL BOTANIST** with systematic orientation to do innovative research. Starting 1 July 1981. Ph.D. plus postdoctoral work and ability to attract grant support required. Salary open. Send résumé and names of three references to: Search Committee, Fairchild Tropical Garden, 10901 Old Cutler Road, Miami, Fla. 33156. An Equal Opportunity Employer.

### VERTEBRATE PHYSIOLOGIST FIELD BOTANIST

Two openings available at the assistant professor level. Effective date: September 1981. Applicants should have Ph.D. and a strong commitment to research and undergraduate teaching. Some courses are team-taught and applicants should have an interest in directing independent student research. **PHYSIOLOGIST** should have a specialty in either vertebrate cardiovascular, respiratory, or renal physiology. The successful applicant will participate in teaching either an introductory course in human biology or general biology, an intermediate course in comparative anatomy and/or cell physiology, and an advanced course in vertebrate physiology. **BOTANIST** should have a specialty in field of population botany and systematics. The successful applicant will participate in teaching either an introductory course in general biology or horticulture, an intermediate course in ecology, and an advanced course in field botany. Applicant should have an interest in using and supervising the operation of well-maintained greenhouses and an arboretum. Credentials will be reviewed when complete. Send curriculum vitae, graduate and undergraduate transcripts, brief outline of research plans, and a letter of recommendation to: Dr. Mary M. Allen, Chairman, Department of Biological Sciences, Wellesley College, Wellesley, Mass. 02181. An Equal Opportunity/Affirmative Action Employer.

**VISITOR APPOINTMENTS** are available for new and established Ph.D.'s for up to 1-year periods to carry out research in solar physics, solar-terrestrial physics, and related subjects. Applicants should provide curriculum vitae, including education, work experience, publications, the names of three scientists familiar with their work, and a statement of their research plans. Applications must be received by 15 January 1981 and they should be sent to: Visitor Committee, High Altitude Observatory, National Center for Atmospheric Research (NCAR), P.O. Box 3000, Boulder, Colorado 80307. NCAR is an Equal Opportunity/Affirmative Action Employer.

## SYMPOSIUM

**MOLECULAR INTERRELATIONS OF NUTRITION AND CANCER**—34th annual Research Symposium in Houston, 4 to 6 March. To cover physiological effects in cancerous host; energy metabolism in tumor cells; nutritional modulation of cell proliferation and carcinogenesis. Co-chairs: Doctors M. Arnett, J. van Eys, and Y. M. Yang. Contact: Steve Stuyck, c/o M. D. Anderson Hospital, Houston, Texas 77030; telephone: 713-792-3030.

## WORKSHOP

### COVALENT MODIFICATION/ TRANSLATIONAL CONTROL 19 and 20 January 1981, Bethesda, Maryland

The International Union of Biochemistry (IUB) and the National Institutes of Health (NIH) will sponsor a workshop which is aimed at presenting the current state of research in a variety of regulatory covalent reactions and discussing optimum strategies for exploring the potential role of such reactions in the regulation of protein synthesis. The emphasis will be on molecular events and the techniques, strategies, and criteria to be used in evaluating their role in regulation. Presentations are by invitation only. However, in order to allow for particularly interested individuals to attend, a few places will be held in reserve. There will be no registration or conference fees.

Individual requests may be addressed to either of the workshop co-organizers:

Brian Safer, M.D., Ph.D. Room 7D12 Building 10 National Heart, Lung and Blood Institute NIH Bethesda, Md. 20205	Barbara Williams, Ph.D. Room 918 Westwood Building National Institute of General Medical Sciences NIH Bethesda, Md. 20205
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## GRADUATE STUDY

### NEUROSCIENCES AT BAYLOR COLLEGE OF MEDICINE

An interdepartmental Neuroscience Program is offered at Baylor College of Medicine for students interested in advanced study leading to the Ph.D. in neuroscience. The faculty of the program share common interests in neurobiology and strive to promote collaborative research intended to maximize the interdisciplinary nature of the student's education. Applications must be completed by 1 March 1981. Applicants are notified regarding admission and financial support by 15 April. Information regarding the program curriculum, research opportunities, and application procedures may be obtained from:

Scott F. Basinger, Ph.D.  
Predoctoral Director  
Program in Neuroscience  
Baylor College of Medicine  
Texas Medical Center  
Houston, Texas 77030

**GRADUATE ASSISTANTSHIPS IN LIFE SCIENCES** up to \$5300 per year are available for master's (thesis) and Ph.D. candidates with research interests in animal, aquatic, physiological and plant ecology, bacterial and physiological genetics; medical microbiology; comparative, endocrine and sensory physiology; cellular biology; immunobiology; medical technology; mycology; neurobiology; parasitology; and virology. Research fellowships from NIH and NSF supported faculty research grants are available. Contact: Chairperson, Department of Life Sciences, Indiana State University, Terre Haute, Indiana 47809, for application and information. Indiana State University is an Equal Opportunity/Affirmative Action Employer.

The Department of Biochemistry at The University of Texas Health Science Center at San Antonio invites applications for **GRADUATE STUDY AND TEACHING ASSISTANTSHIPS** for fall 1981. The department has vigorous research programs that cover a wide range of biochemical areas leading to the Ph.D. degree and is well equipped for research. Stipends for a 12-month period begin at \$5700. For more information, write to: Dr. Paul Horowitz, Department of Biochemistry, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, Texas 78284. An Equal Opportunity/Affirmative Action Employer.

## GRADUATE TRAINING

The Department of Anatomy, College of Medicine, University of Cincinnati, invites applications for doctoral student fellowships for fall 1981. The department maintains vigorous research programs in cell biology and developmental biology/teratology which employ a wide variety of morphological and biochemical techniques. For more information, write to: Dr. Patricia Tornheim, Department of Anatomy, College of Medicine, University of Cincinnati, Cincinnati, Ohio 45267. An Equal Opportunity/Affirmative Action Employer.

## GRADUATE STUDY

**GRADUATE TRAINING IN BASIC MEDICAL SCIENCES**—The College of Medicine, University of South Alabama, invites applications from qualified individuals interested in pursuing the Ph.D. degree in basic medical sciences. Applications are now being accepted for September 1981 entrance into the graduate program leading to the doctorate with specialization in either anatomy, biochemistry, microbiology/immunology, pharmacology or physiology. This is a unique program designed to accept both qualified nondegree-holding students after only 3 years of appropriate undergraduate study as well as applicants holding degrees. Tuition is waived. A \$5000 per year stipend is awarded to each student accepted into the program. Applications are accepted at any time but must be completed by 30 April. For further information, write:

Edwin R. Hughes, M.D., Director  
Graduate Program in Basic Medical Sciences  
University of South Alabama  
MSB 2152  
Mobile, Alabama 36688

## PROGRAM

**PRE- AND POSTDOCTORAL TRAINING IN ENVIRONMENTAL TOXICOLOGY.** Interdepartmental program leading to Ph.D. in either biochemistry and biophysics, food science and technology, or pharmacology and toxicology. Research emphasis: metabolism and mode of toxic action of environmental contaminants. Postdoctoral position requires degree in chemistry, biochemistry, or biological sciences. Applications due January 1981. U.S. citizens or permanent residents only. NIEHS/NRS Award funding. Dr. Ian J. Tinsley, Program Director, EHSC, Oregon State University, Corvallis, Oregon 97331. An Equal Opportunity/Affirmative Action Institution.

## TRAINEESHIPS

**POSTDOCTORAL TRAINEESHIP** in epidemiology and biostatistics related to ophthalmology and vision research at major medical center. Two-year joint program with Harvard School of Public Health, leading to a master of science degree in epidemiology. Supported by an NIH training grant. Send curriculum vitae to: Dr. Bernard Schwartz, Chairman and Professor, Department of Ophthalmology, Tufts-New England Medical Center, 171 Harrison Avenue, Boston, Mass. 02111. An Equal Opportunity Employer, M/F.

**POSTDOCTORAL TRAINEESHIPS** in environmental toxicology and pathology, available now and in mid-1981, for research in the following areas: chemical carcinogenesis; teratology; biochemical toxicology (cellular toxicity and mechanisms of action); and morphological changes induced by toxicants. Preference will be given to candidates who have received the Ph.D. within the last 2 years (or are about to receive the degree) in biochemistry or a closely related field. NIH-funded interdisciplinary program, open only to U.S. citizens and permanent residents. To apply, identify area of interest and send résumé, transcripts, and three letters of recommendation to: Dr. R. D. Hinsdill, Environmental Toxicology Center, 309 Infirmary, University of Wisconsin, Madison, Wis. 53706, telephone: 608-263-4580. Equal Opportunity/Affirmative Action Employer.

## FELLOWSHIPS

**GRADUATE TRAINING IN PHARMACOLOGY.** Research training and course work leading to the Ph.D. degree and realistically designed for career opportunities in this expanding field are offered. Major departmental research programs include: molecular, cardiovascular, renal, and nervous system pharmacology; the toxicology of therapeutic and environmental agents including drugs of abuse; clinical pharmacology. A limited number of fellowships offering stipend and tuition are available. Early application for August 1981 is advised. Apply to: Director of Graduate Studies, Department of Pharmacology and Therapeutics, Medical School, STATE UNIVERSITY OF NEW YORK AT BUFFALO, 127 Farber Hall, Buffalo, N.Y. 14214. An Equal Opportunity/Affirmative Action Employer.



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The Dominion Radio Astrophysics Observatory, Penticton, B.C., of the Herzberg Institute of Astrophysics, requires a Radio Astronomer to undertake original research using the Observatory's radio telescopes independently and in collaboration with other staff. Facilities include a spectroscopic four-element synthesis telescope with 1 arcmin resolution at 21-cm wavelength, a 25m diameter paraboloid with receivers at 11, 21, 31 and 76-cm wavelengths, a PDP11/45 computer, a library and an electronics development laboratory.

Applicants must have a Ph.D. or equivalent in Astronomy, Physics, Engineering or related science and several years' experience in Radio Astronomy. Knowledge of English is essential.

Salary—will depend on qualifications.

Apply in writing to the Employment Office, National Research Council of Canada, Ottawa, Ontario K1A 0R6. In reply, please quote HIA-81.

# NRC

### RESEARCH OPPORTUNITIES IN ENERGY-RELATED FIELDS AT U.S. DEPARTMENT OF ENERGY RESEARCH FACILITIES

The U.S. Department of Energy's research facilities invite applications from qualified faculty and graduate and undergraduate students interested in participating in ongoing DOE energy-related research and development. The facilities are located in Carbondale, Illinois; Bartlesville, Oklahoma; Pittsburgh, Pennsylvania; Puerto Rico; Aiken, South Carolina; Oak Ridge, Tennessee; and Morgantown, West Virginia. Appointments may be made for the summer and a limited number for the academic year.

The program is managed for DOE by Oak Ridge Associated Universities.

Information and application materials may be obtained from:



Oak Ridge Associated Universities  
University Programs  
P.O. Box 117  
Oak Ridge, Tennessee 37830

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

Applications must be in by January 19, 1981.

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## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIPS IN REPRODUCTIVE BIOLOGY.** Applications are invited for postdoctoral fellowships in the Laboratory of Human Reproduction and Reproductive Biology of Harvard Medical School. The laboratory is an interdisciplinary center for research on biological problems in reproduction. The laboratory provides research opportunities in the anatomical, physiological, endocrinological, and biochemical approaches to ovarian testicular function, cytokinesis, and molecular biology, fertilization, the preimplantation mammalian embryo, neuroendocrine physiology, behavioral endocrinology, and contraceptive development. Send complete curriculum vitae including a statement of research interests and names of at least three references to: **Kenneth J. Ryan, M.D., Director, Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School, 45 Shattuck Street, Boston, Mass. 02115.** *Harvard is an Equal Opportunity Employer.*

### C. H. BEST FOUNDATION POSTDOCTORAL FELLOWSHIP

In diabetic research, molecular endocrinology, molecular biology, differentiation, immunology, structure and function of membranes or lipid metabolism. Tenable for 2 years after 1 July 1981 with a stipend of \$16,000 plus travel and dependent's allowance. Available to new Ph.D.'s or candidates with fewer than 2 years of postdoctoral training by 1 July 1981. Send curriculum vitae and three letters of reference before 15 January 1981 to:

**Dr. C.-H. Siu**  
Search Committee Chairman  
Banting and Best Department of Medical Research  
University of Toronto  
Toronto, Ontario, Canada M5G 1L6

**RESEARCH FELLOWSHIPS** in clinical epidemiology of lung diseases for July 1981. NIH-supported stipends for a 2-year program working in environmental and occupational lung disease and/or natural history studies on chronic lung disease along with didactic training in epidemiology leading to M.S. degree at Harvard School of Public Health. Tuition and malpractice fees in addition to stipends. Available for U.S. citizens and permanent visa holders. Must be Board-eligible in internal medicine or equivalent. Inquiries to: **Frank E. Speizer, M.D., Department of Medicine, Harvard Medical School, 180 Longwood Avenue, Boston, Mass. 02115.**

**POSTDOCTORAL FELLOWSHIP IN LIPID BIOCHEMISTRY/PHARMACOLOGY.** Work will involve the effects of ischemia and infarct on myocardial lipid metabolism, the role of lipolytic enzymes, and the physiological effects of lipid degradation products. Experience with heart perfusion techniques is desirable. Base stipend: \$14,880. Submit curriculum vitae to: **Dr. H. H. O. Schmid, The Hormel Institute, University of Minnesota, Austin, Minn. 55912.** *University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages women and minority applicants.*

### POSTDOCTORAL AWARDS IN OCEAN SCIENCE AND ENGINEERING

Woods Hole Oceanographic Institution invites applications for 1-year postdoctoral scholar awards from new and recent doctorates in fields of biology, chemistry, engineering, geology, geophysics, mathematics, meteorology, and physics, as well as oceanography. Recipients of awards are selected on a competitive basis, with primary emphasis placed on research promise.

Fellowship stipend is \$18,500. Appointees are eligible for group health insurance and a modest research budget. Recipients are encouraged to pursue their own research interests independently or in association with resident staff. Completed applications must be received by 1 February 1981 for 1981-1982 awards. Awards will be announced in March. Write for application forms to: **Dean of Graduate Studies, Education Office, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543.**

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## FELLOWSHIPS

**Herbert H. Jasper Postdoctoral Fellowship.** One year with stipend of C\$20,000. Exceptional research facilities, working with investigator of choice. Submit curriculum vitae, research interests to a maximum of three pages, and two letters of reference before 28 February 1981 to: **Fellowship Committee, Centre de recherche en sciences neurologiques, Faculté de médecine, Université de Montréal, C.P. 6128, Montréal, Québec, Canada H3C 3J7.** Fellowship award to be announced 15 April 1981.

### MARINE POLICY AND OCEAN MANAGEMENT RESEARCH FELLOWSHIPS

Woods Hole Oceanographic Institution offers 1-year fellowships to professionals in social sciences, law, or natural sciences to conduct research in marine policy and ocean management (a second year's appointment may be possible). Recipients of awards are selected on a competitive basis, with primary emphasis placed on research promise.

Fellowship stipend is \$18,500. Appointees are eligible for group health insurance and a modest research budget. Recipients are encouraged to pursue their own research interests independently or in association with resident staff. Completed applications must be received by 1 March 1981 for 1981-1982 awards. Awards will be announced in April. Write for application forms to: **Dean of Graduate Studies, Education Office, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543.**

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**POSTDOCTORAL RESEARCH FELLOWSHIPS IN BIOPOLITICS.** Northern Illinois University. Two 1-year positions with a stipend of \$16,000 each. Term: 15 August 1981 to 15 August 1982. Fellows will work on various projects and assist in developing new research initiatives at the Center for Biopolitical Research, with time available for personal research. Center work will focus on assessments of public policies in the areas of biotechnology and bioethics. Preference will be given to candidates with specialties in quantitative public policy analysis and/or technology assessment who have had experience in funded projects and the writing of research proposals. Applications will also be considered from research-oriented specialists in biopolitics, science and technology, sociobiology, human psychophysiology, and political psychology. Send curriculum vitae and a statement of research interests by 1 February 1981 to: **Thomas C. Wiegeler, Director, Center for Biopolitical Research, Northern Illinois University, DeKalb, Ill. 60115.** Telephone: 815-753-0431.

**POSTDOCTORAL TRAINING FELLOWSHIP IN PULMONARY RESEARCH** available to M.D. or Ph.D. interested in joining a group working on biochemical and physiological aspects of chronic airways obstruction and emphysema. Contact with curriculum vitae: **Allen B. Cohen, M.D., Ph.D., Temple University Health Sciences Center, Philadelphia, Pa. 19140.** *Equal Opportunity/Affirmative Action Employer.*

### POSTDOCTORAL RESEARCH FELLOWSHIPS IN INTERNATIONAL SECURITY AND ARMS CONTROL

Fellowships for research in international security and arms control are available for the academic year 1981-1982 at Harvard University's Center for Science and International Affairs. The Center focuses on understanding the role of military force in world politics, with special emphasis on the development and evaluation of means by which constraints on nuclear weapons capabilities can contribute to international security. The research is multidisciplinary and integrative in character. Applicants should have a doctoral degree but need not have research experience in international security and arms control. Some preference is given to those with scientific, technical, or economic backgrounds. Send curriculum vitae, brief (1 to 2 pages) statement of research interests, and three letters of recommendation to: **Associate Director, Center for Science and International Affairs, Harvard University, 79 Boylston Street, Cambridge, Massachusetts 02138,** before 1 February 1981. *Awards are based upon merit, without regard to race, color, sex, religion, national origin, or age of any applicant.*

## FELLOWSHIPS

The Committee on Institutional Cooperation (CIC), the academic consortium of the Big Ten universities and the University of Chicago, offers at least 25 4-year **GRADUATE FELLOWSHIPS** in the sciences, mathematics, and engineering to Black, Hispanic, and Native American students to study at the CIC universities starting 1981-1982. Includes a minimum annual stipend of \$4800 and payment of tuition. For information: **CIC Minorities Fellowships Program, Kirkwood 111, Indiana University, Bloomington, Ind. 47405.** Telephone, toll-free, through 1 February: 800-457-4420.

### POSTDOCTORAL RESEARCH FELLOWSHIPS IN HUNTINGTON'S DISEASE

Applications are invited for postdoctoral fellowships in clinical and/or basic research in studies relating to problems of Huntington's disease. Applicants must have professional degree of M.D. or Ph.D. Candidates are welcome whose field of interest is one of the following: all areas of basic sciences, including neuroscience, biochemistry, molecular biology, pathology, and pharmacology, or from areas of clinical sciences, including neurology, psychiatry, and human genetics. Fellowship stipend is between \$13,000 and \$17,000, depending upon the educational background of the fellow. The fellowship may be done at any institution with adequate facilities.

Application deadline is 10 January 1981. Awards will be announced by 15 February 1981 for fellowship to begin 1 July 1981. Send four copies of the following: curriculum vitae and bibliography, at least two letters of recommendation, and a proposed research program, to: **The National Huntington's Disease Association, 128A East 74 Street, New York, N.Y. 10021.**

### HAAGEN-SMIT/TYLER GRADUATE FELLOWSHIPS

In 1979 the John and Alice Tyler Ecology Award was presented to the California Institute of Technology in honor of and to commemorate Dr. Arie J. Haagen-Smit (1900-1977), professor of bioorganic chemistry pioneer in the analysis of photochemical air pollution. This award has made it possible for Caltech to establish a series of fellowships in his memory. Four fellowships per year carrying a stipend of \$8000 per year (or \$6000 for 9 months) plus full tuition will be awarded to new or continuing graduate students pursuing environmental study and research toward the Ph.D. degree within any of Caltech's academic divisions.

Applicants should write to: **Dean of Graduate Studies, Caltech, Mail Code 204-40, Pasadena, Calif. 91125,** for a regular application form for graduate admission and the special application form for the Haagen-Smit/Tyler Graduate Fellowship. Applications are due by 15 February 1981 for academic year 1981-1982. *Caltech is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL FELLOWSHIPS IN IMMUNOLOGY** are available immediately through the Division of Immunology, Department of Microbiology and Immunology, Duke University Medical Center. Training is offered in cellular immunology, human immunogenetics, tumor immunology, cell surface immunogenetics, and clinical immunology. Fellowships are open to American citizens and foreign nationals with permanent U.S. resident visas holding Ph.D., M.D., or equivalent degree who have had less than 3 years of postdoctoral experience. Send letters of inquiry to: **Dr. E. G. Reisner, Box 3010, Division of Immunology, Duke University Medical Center, Durham, N.C. 27710.**

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**Organic Chemist:** Position entails the design and synthesis of peptides and peptide analogs for use as substrates for biological compounds as well as maintaining state-of-the-art knowledge concerning peptide chemistry research. Qualified candidate should have a Ph.D. in Organic Chemistry with a strong background in Biochemistry and an interest in working in the Diagnostics field. Experience with chromogenic and fluorogenic substrates is also necessary.

**Process Biochemist:** Primary responsibilities include technical trouble-shooting and improvement of diagnostic products. Position requires strong communication skills, and some business management training is a definite plus. Qualified candidates should have a Ph.D. in Biochemistry and the desire to apply scientific background in solving technical problems related to manufacture and field performance of diagnostic tests.

**Assistant Molecular Biologist:** Exceptional opportunity to join ongoing recombinant DNA research project involving the use of cloning and sequencing techniques. Qualified candidates should have an M.S. or B.S. in Molecular Biology, Biochemistry, or Microbiology. Experience with protein isolation and radioimmunoassays is also desirable.

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**Protein Chemist/Group Leader:** An excellent opportunity to join a chemical manufacturing and development department in a supervisory capacity. Qualified candidate should be a degreed Protein Chemist with at least five years development experience using isolation, separation, and characterization techniques. Previous supervisory experience is highly desirable and strong communication skills are a must.

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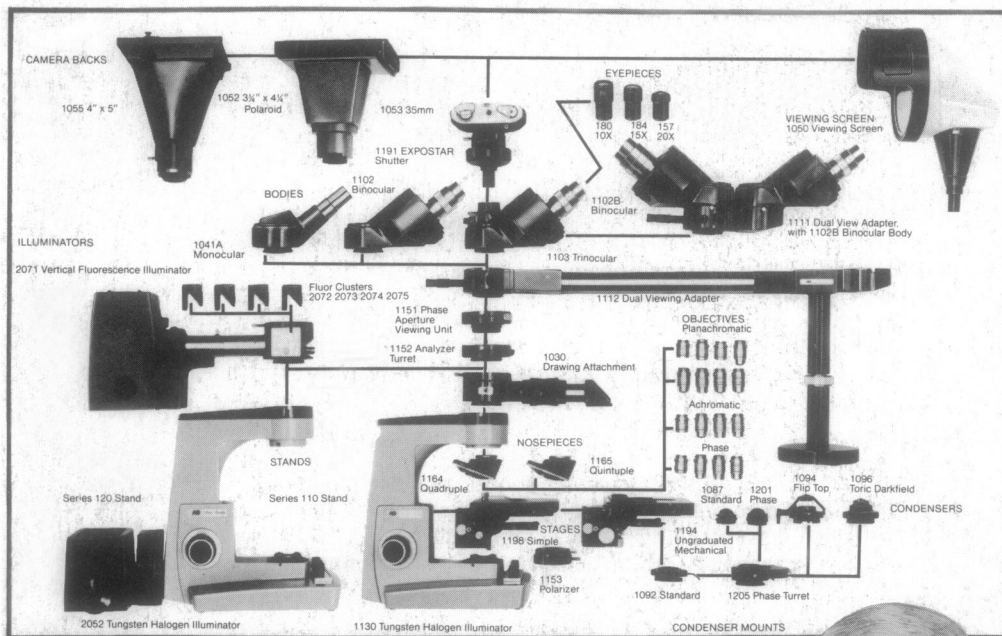
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