

More and more, science is dragged into politics.

In these circumstances, Stever's procedural prescriptions remain appropriate, though for reasons other than those he identifies. Procedural changes will neither produce appreciably better information nor depoliticize the issues. What they can do is to manage the political debate more effectively by granting meaningful access to all affected parties and balancing the power of competing interests. Where the substance of regulation remains ill-defined and highly politicized, the fairness of the process of regulatory decision-making assumes greater importance. Stever's prescriptions are likely to do little to reduce the vigor of the debate in arenas like Seabrook, but they may restructure the debate in ways that encourage a more even-handed treatment of the participants.

THOMAS L. ILGEN

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## Structures of Proteins

**Protein Folding.** Proceedings of a conference, Regensburg, Germany, Sept. 1979. RAINER JAENICKE, Ed. Elsevier/North-Holland, New York, 1980. 588 pp., illus. \$73.25.

This proceedings volume contains a number of substantial, well-written papers that offer novel approaches to exciting problems. The question addressed is How do proteins fold up? It has been assumed, since the early experiments of Anfinsen, that the protein sequence must contain all the information needed to create the "native" structure as at least a kinetically stable state. There have been three broad approaches to protein folding.

Experimental studies of protein denaturation showed the process to be highly cooperative and led to a "two-state" model in which only "native" and "denatured" species were recognized. In the last ten years, however, various trapping procedures, fast kinetics techniques, and cryoenzymology have provided undisputable evidence that there are kinetically important intermediates. Much of this work is presented in this volume, the accounts provided by R. L. Baldwin and T. E. Creighton being exceptionally valuable. The message from the experimenters is that the folding pathway seems to be complex; intermediates with considerable tertiary structure form well before the final state

Obligatory but incorrectly folded structures that must rearrange to yield the native protein have been found for trypsin inhibitor. A long-standing puzzle that emerges more forcefully on reading several of the experimental papers is that clipping a few residues from the carboxyl end of a number of proteins has a profound effect on the refolding kinetics and the stability of the native state. No general explanation is offered.

The second—some would say the major—approach has centered on the proliferation of structures determined to high resolution by x-ray crystallography. This volume is not a structural compendium, and no new structures are reported. There are, however, many papers that use the known structures as data for further analysis. The attempt to see classes of structures has a long and honorable history, beginning, in the protein field, with Pauling's insights into secondary structures. Current efforts are, on the one hand, more detailed, focusing for example on arrangements of strands in beta sheets, and, on the other, aimed at higher levels of structure, such as investigations of beta sheet stacking and domain structures. These efforts are well represented, with a well-illustrated summary of protein structures by J. S. Richardson and contributions by a number of other well-known workers. It is increasingly clear that, at least on a structural level, there are a relatively small number of domain-sized building blocks that are reused in quite similar ways from one protein to the next.

The third approach has been mathematical modeling of proteins to attempt to predict or to understand the native structure. Pioneers in this field, such as H. A. Scheraga, O. B. Ptitsyn, and V. Lim, have their latest contributions here, and there is a nice introduction and review by M. Levitt. My general impression is that the direct energy minimization efforts are still considerably short of their goal, largely, but not exclusively, because of the magnitude of the computational task. Approaches that treat only part of the problem—for instance, the combinatorial methods presented by F. M. Richards, T. J. Richmond, M. J. E. Sternberg, and F. E. Cohen—seem very promising if one wants to put a large amount of information together in a model that will produce a low-resolution "protein-like" structure.

The major omissions from the volume are considerations of protein folding in vivo and of internal motions in proteins. The latter topic has been advanced through high-resolution nuclear magnetic resonance spectroscopy, thermal pa-

rameter diffraction experiments, and calculations of molecular dynamics. Only the NMR story is offered here, through the elegant studies of K. Wuthrich, H. Roder, and G. Wagner. Fortunately this topic was covered in a recent discussion of the Biophysical Society.

In sum, this is an excellent book for all those interested in protein folding in vitro. It has enough new and thought-provoking material to serve as a source book for an advanced graduate course and certainly belongs on library shelves even in these austere days.

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## Books Received

**Adhesion of Microorganisms to Surfaces.** Papers from a meeting, Dec. 1977. D. C. Elwood, J. Melling, and P. Rutter, Eds. Published for the Society for General Microbiology by Academic Press, New York, 1979. x, 216 pp., illus. \$23. Special Publications of the Society for General Microbiology, 2.

**Advanced Analysis with the Sharp 5100 Scientific Calculator.** J. M. Smith. Wiley-Interscience, New York, 1979. x, 132 pp., illus. Paper, \$6.95.

**Advances in Family Psychiatry.** Vol. 1. John G. Howells, Ed. International Universities Press, New York, 1979. x, 560 pp. \$29.95.

**Advances in Ophthalmology.** Vol. 40. M. J. Roper-Hall, H. Sautter, and E. B. Streiff, Eds. Karger, Basel, 1980. viii, 224 pp., illus. \$102.56.

**Advances in Virus Research.** Vol. 25. Max A. Lauffer, Frederick B. Bang, Karl Maramorosch, and Kenneth M. Smith, Eds. Academic Press, New York, 1979. x, 534 pp., illus. \$46.

**Algebraic Topology.** Aarhus 1978. Proceedings of a symposium, Aarhus, Denmark, Aug. 1978. J. L. Dupont and I. H. Madsen, Eds. Springer-Verlag, New York, 1979. vi, 696 pp. Paper, \$33.60. Lecture Notes in Mathematics, vol. 763.

**Amorphous Semiconductors.** M. H. Brodsky, Ed. Springer-Verlag, New York, 1979. xvi, 340 pp., illus. \$49.50. Topics in Applied Physics, vol. 36.

**Analytical Methods for Coal and Coal Products.** Vol. 3. Clarence Karr, Jr., Ed. Academic Press, New York, 1979. xx, 642 pp., illus. \$55.

**Bibliography of Fossil Vertebrates 1973-1977.** Morton Green, Jerl E. Pringle, and Jiri Zidek. South Dakota School of Mines and Technology, Rapid City, 1979. Various ages. Spiral bound, \$11. Dakoterra, No. 1.

**Biology and Quaternary Environments.** Papers from a symposium, Canberra, Australia, Feb. 1978. D. Walker and J. C. Guppy, Eds. Australian Academy of Sciences, Canberra City, 1978. viii, 264 pp., illus. Paper, A\$11.

**The Biology of Pulp and Dentine.** A Historic, Terminologic-Taxonomic, Histologic-Biochemical, Embryonic, and Clinical Survey. Louis J. Baume. Karger, Basel, 1980. x, 246

(Continued on page 456)

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Model LN102 offers pumping efficiencies of up to 25 percent with dyes ranging from 357 to 710 nanometers. Pulse widths are typically around 200 picoseconds with peak powers up to 100 kilowatts. Repetition rate is continuous-

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gravity. The sensor acts as a Wheatstone bridge, emitting a flow-proportional electric signal based on temperature-caused pressure differences perceived in the cell's chambers. The device can be equipped to analyze even corrosive gases. Siemens. Circle 790.

## Campylobacter Isolation and Recovery

The Campylobacter System includes blood agar plates, CampyPak II gas-generating envelopes, a procedure guide, and a GasPak jar. The blood agar plate contains a highly selective medium for the isolation of *Campylobacter fetus* spp. *jejuni* from human stool specimens. Five antimicrobial constituents suppress growth of the normal flora. The CampyPak II envelope contains its own catalyst. The operator merely adds water to create a microaerophilic environment in a GasPak 100 jar suitable to supporting the growth of *C. fetus* spp. *jejuni*. The enclosed guide is easy to follow. BBL Microbiology Systems. Circle 791.

## Literature

*Tissue Culture Microscope* features the Injectoscope model IMT-YF for inverted phase-contrast studies. Olympus. Circle 782.

*Amino Acid Analyzer* uses HPLC to study amino acid content of a 100-picomole sample of protein hydrolysate in 65 minutes. LKB Instruments. Circle 783.

*Medical and Student Microscope* offers the HM-LUX 3 with its newly computed achromatic objectives and rugged construction. E. Leitz. Circle 784.

*Fluorescence Wavelength Kit* contains a set of power supplies, excitation lamps, and emission filters for the FluoroMonitor III detector for HPLC. Laboratory Data Control. Circle 785.

*Microcentrifuge* characterizes the model 235, a compact benchtop unit that achieves 13,750 revolutions per minute in less than 6 seconds. Fisher Scientific. Circle 786.

*Vacuum Pumps* characterizes the series 3 pumps, three units for medium-displacement applications. Alcatel Vacuum Products. Circle 794.

*Calorimetry* is devoted to a line of adiabatic, plain jacket, and solution calorimeters and a microprocessor-based control. Parr Instrument. Circle 795.

*Laboratory Products* lists many items for research including incubators, baths, freezers, ovens, mixers, chambers, cages, and centrifuges. Lab-Line Instruments. Circle 798.

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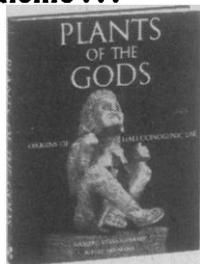


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## BOOKS RECEIVED

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pp., illus. Paper, \$64. Monographs in Oral Science, vol. 8.

**The Boundary-Layer Method in Diffraction Problems.** V. M. Babič and N. Y. Kirpichnikova. Translated from the Russian edition (Leningrad, 1974) by E. F. Kuester. Springer-Verlag, New York, 1979. vi, 140 pp., illus. \$18.70. Springer Series in Electrophysics, vol. 3.

**The Caledonides in the U.S.A.** Geological Excursions in the Northeast Appalachians. James W. Skehan and Philip H. Osberg, Eds. Weston Observatory, Boston College, Weston, Mass., 1979. x, 250 pp., illus. Paper, \$12. Contributions to the International Geological Correlation Program, Project 27—Caledonide Orogen.

**Cancer Care.** A Personal Guide. Harold Glucksberg and Jack W. Singer. Johns Hopkins University Press, Baltimore, 1980. xii, 414 pp. \$14.95.

**Cancer Markers.** Diagnostic and Developmental Significance. Stewart Sell, Ed. Humana Press, Clifton, N.J., 1980. xxviii, 542 pp., illus. \$49.50. Contemporary Biomedicine.

**Cardiac Receptors.** Papers from a symposium, Leeds, England, Sept. 1976. R. Hainsworth, C. Kidd, and R. J. Linden, Eds. Cambridge University Press, New York, 1980. xvi, 518 pp., illus. \$69.50.

**Darwinism and Human Affairs.** Richard D. Alexander. University of Washington Press, Seattle, 1980. xxiv, 318 pp. \$14.95.

**Development and Chemical Specificity of Neurons.** Proceedings of a symposium, Schatzalp/Davos, Switzerland, Sept. 1978. M. Cuénod, G. W. Kreutzberg, and F. E. Bloom, Eds. Elsevier/North-Holland, New York, 1979. xvi, 514 pp., illus. \$97.50. Progress in Brain Research, vol. 51.

**Development and Evolution of Brain Size.** Behavioral Implications. Papers from a symposium, Wayne, N.J., Apr. 1978. Martin E. Hahn, Craig Jensen, and Bruce C. Dudek, Eds. Academic Press, New York, 1979. xviii, 394 pp., illus. \$29.50.

**Development in the Preschool Years.** Birth to Age Five. Thomas E. Jordan. Academic Press, New York, 1980. xiv, 270 pp. \$16.50. Educational Psychology.

**A Dictionary of Botany.** R. John Little and C. Eugene Jones. Illustrations by Raymond D. Smith. Van Nostrand Reinhold, New York, 1980. x, 400 pp. \$18.50.

**Dictionary of Organic Compounds.** Fifteenth and Cumulative Supplement. Oxford University Press, New York, ed. 4, 1979. vi, 1058 pp., illus. \$198.

**Differential Psychology.** Henry L. Minton and Frank W. Schneider. Brooks/Cole, Monterey, Calif., 1980. xvi, 514 pp., illus. \$18.95.

**Digital Circuits for Binary Arithmetic.** R. M. M. Oberman. Halsted (Wiley), New York, 1979. xii, 340 pp., illus. \$35.

**Direct Imaging of Atoms in Crystals and Molecules.** Proceedings of a symposium, Lidköping, Sweden, Aug. 1979. Lars Kihlberg, Ed. Royal Swedish Academy of Sciences, Stockholm, 1979. 296 pp., illus. Paper, 300 Sw.kr. Nobel Symposium 47. Also published in *Chemica Scripta* 1978-79, vol. 14.

**Disorders of the Schizophrenic Syndrome.** Leopold Bellak, Ed. Basic, New York, 1980. x, 630 pp. \$27.50.

**The Essential Guide to Prescription Drugs.** James W. Long. Harper and Row, New York,

ed. 2, 1980. xvi, 864 pp. Cloth, \$25; paper, \$8.95.

**The Essential T. C. Lethbridge.** Tom Graves and Janet Hoult, Eds. Routledge and Kegan Paul, Boston, 1980. xx, 216 pp. \$15.

**The Evolution of Adaptation by Natural Selection.** Papers from a meeting, London, Dec. 1978. The Royal Society, London, 1979. x, 170 pp., illus. £9.50. First published in *Proceedings of the Royal Society of London*, series B, vol. 205, No. 1161.

**Excited States.** Vol. 4. Edward C. Lim, Ed. Academic Press, New York, 1979. xii, 400 pp., illus. \$42.50.

**Extraction Metallurgy.** J. D. Gilchrist. Pergamon, New York, ed. 2, 1980. x, 456 pp., illus. Paper, \$16.

**Extraversion and Introversio.** An Interactional Perspective. Larry Wayne Morris. Hemisphere, Washington, D.C., and Halsted (Wiley), New York, 1979. xviii, 218 pp. \$19.95. Series in Clinical and Community Psychology.

**Families of Meromorphic Functions on Compact Riemann Surfaces.** Makoto Namba. Springer-Verlag, New York, 1979. xii, 284 pp. Paper, \$16.30. Lecture Notes in Mathematics, vol. 767.

**Farmland, Food and the Future.** Max Schnepf, Ed. Soil Conservation Society of America, Ankeny, Iowa, 1980. x, 214 pp. Paper, \$8.

**Feeding Africa.** Proceedings of a symposium, Cape Coast, Ghana, May 1978. Pan-African Pugwash Group, Cairo, 1979 (available from Pugwash Conferences, 60 Great Russell Street, London). 230 pp. Paper, £5.

**Finite Mathematics and Its Applications.** Larry J. Goldstein and David I. Schneider. Prentice-Hall, Englewood Cliffs, N.J., 1980. xviii, 420 pp., illus. + appendix. \$15.95.

**Greek Americans.** Struggle and Success. Charles C. Moskos, Jr. Prentice-Hall, Englewood Cliffs, N.J., 1980. xii, 162 pp. Cloth, \$9.95; paper, \$6.95. Ethnic Groups in American Life Series.

**A Guidebook for Technology Assessment and Impact Analysis.** Alan L. Porter, Frederick A. Rossini, Stanley R. Carpenter, and A. T. Roper with Ronal W. Larson and Jeffrey S. Tiller. North-Holland, New York, 1979. xxiv, 510 pp., illus. \$25. North-Holland Series in System Science and Engineering, vol. 4.

**Hall Jackson and the Purple Foxglove.** Medical Practice and Research in Revolutionary America 1760-1820. J. Worth Estes. University Press of New England, Hanover, N.H., 1979. xviii, 292 pp., illus. \$15.

**Handbook on the Toxicology of Metals.** Lars Friberg, Gunnar F. Nordberg, and Velimir B. Vouk, Eds. Elsevier/North-Holland, New York, 1979. xl, 710 pp. \$117.

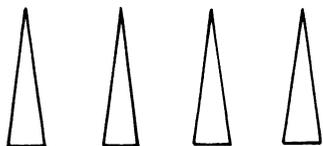
**Heat Treatment of Ferrous Alloys.** Charlie R. Brooks. Hemisphere, Washington, D.C., and McGraw-Hill, New York, 1979. x, 262 pp., illus. \$22.50.

**The History of the Telescope.** Henry C. King. Dover, New York, 1979. xviii, 456 pp., illus. Paper, \$8.95. Reprint of the 1955 edition.

**Homological Group Theory.** Proceedings of a symposium, Durham, Sept. 1977. C. T. C. Wall, Ed. Cambridge University Press, New York, 1980. x, 394 pp., illus. Paper, \$34.50. London Mathematical Society Lecture Note Series, 36.

**Hostility and Aggression.** Dolf Zillman. Erlbaum, Hillsdale, N.J., 1979 (distributor, Halsted [Wiley], New York). x, 422 pp. \$24.95.

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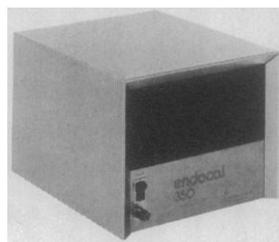
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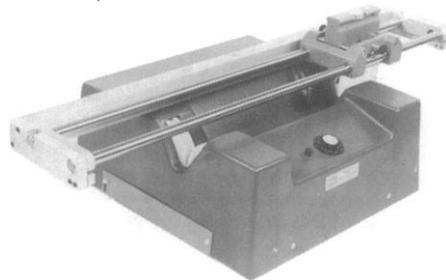
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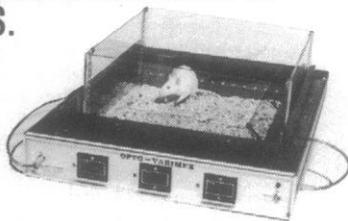
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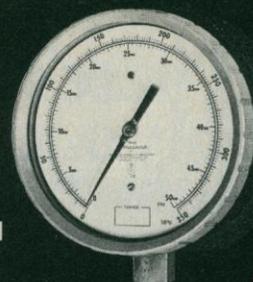
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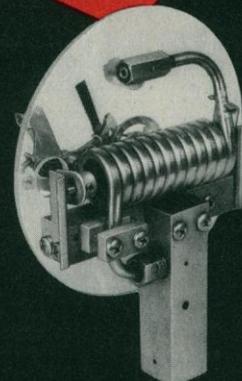
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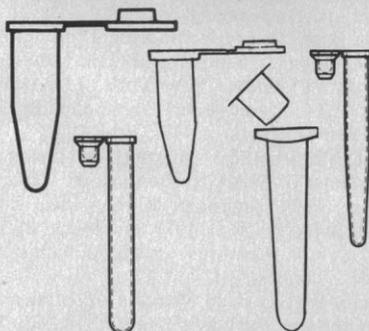
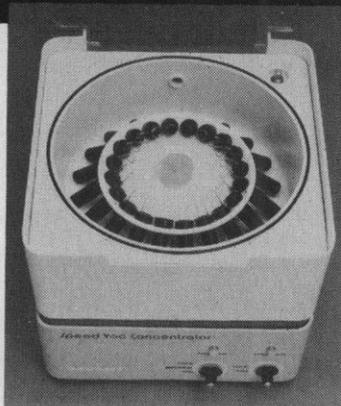


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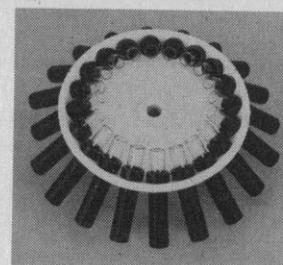
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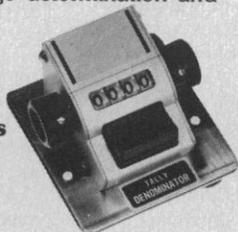


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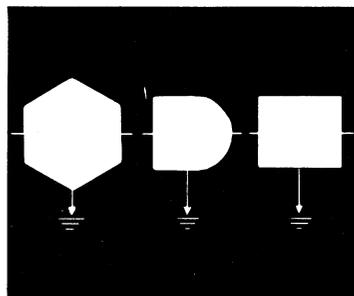
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**Spontaneous Animal Models of Human Disease.** Vol. 2. Edwin J. Andrews, Billy C. Ward, and Norman H. Altman, Eds. Academic Press, New York, 1979. xx, 324 pp., illus. \$52.50. American College of Laboratory Animal Medicine Series.

**Strategy and Tactics of Control of Migrant Pests.** Papers from a meeting, June 1977. The Royal Society, London, 1979. x, 240 pp., illus. £24.15. First published in *Philosophical Transactions of the Royal Society of London*, series B, vol. 287, No. 1022.

**Structure and Biochemistry of Natural Biological Systems.** Proceedings of a symposium, Richmond, Va., Nov. 1978. Ellen M. Walk, Ed. Philip Morris Research Center, Richmond, Va., 1979. 180 pp. Cloth.

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**Synthetic Aspects of Biologically Active Cyclic Peptides.** Gramicidin S and Tyrocidines. Nobuo Izumiya, Tetsuo Kato, Haruhiko Aoyagi, Michinori Waki, and Michio Kondo. Halsted (Wiley), New York, and Kodansha, Tokyo, 1979. xii, 166 pp., illus. \$29.95.

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**Technology and East-West Trade.** Congress of the United States Office of Technology Assessment, Washington, D.C., 1979 (available from the Superintendent of Documents, Washington, D.C.). viii, 304 pp., illus. Paper, \$7.

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Englewood Cliffs, N.J., 1980. xvi, 302 pp., illus. \$14.95.

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**United States Pharmacopeia Dispensing Information 1980.** U.S. Pharmacopeial Convention, Rockville, Md., 1980. xxiv, 792 pp. Paper, \$18.75.

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**Waves and Beaches.** The Dynamics of the Ocean Surface. Willard Bascom. Illustrations by the author. Anchor/Doubleday, Garden City, New York, ed. 2, 1980. xviii, 366 pp. + plates. Cloth, \$12; paper, \$5.95.

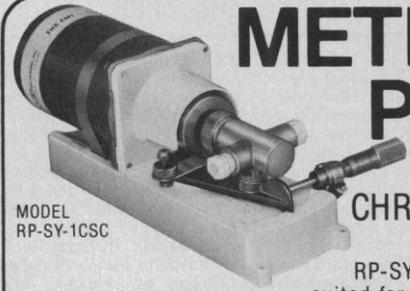
**What Is B. F. Skinner Really Saying?** Robert D. Nye. Prentice-Hall, Englewood Cliffs, N.J., 1979. x, 198 pp. Cloth, \$9.95; paper, \$4.95. A Spectrum Book.

**The Whole Fungus.** The Sexual-Asexual Synthesis. Proceedings of a conference, Kananaskis, Alberta, Canada. Bryce Kendrick, Ed. National Museum of Natural Sciences, Ottawa, Canada, and the Kananaskis Foundation, Kananaskis, Canada, 1979 (available from W. B. Kendrick, Department of Biology, University of Waterloo, Canada). Two volumes. 794 pp., illus. \$18.

**The Whys of Subnuclear Physics.** Proceedings of a school, Erice, Sicily, July 1977. Antonino Zichichi, Ed. Plenum, New York, 1979. viii, 1248 pp., illus. \$85. The Subnuclear Series, 15.

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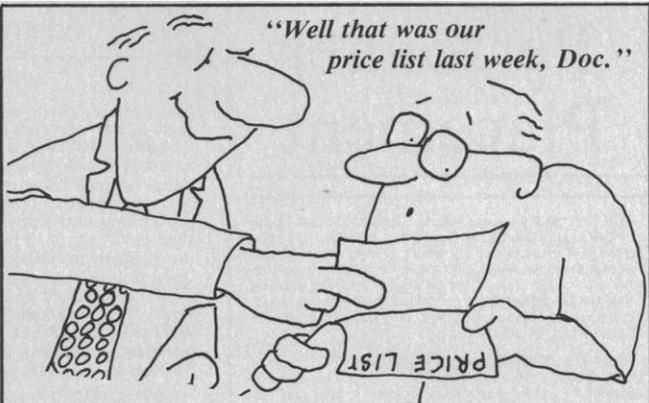
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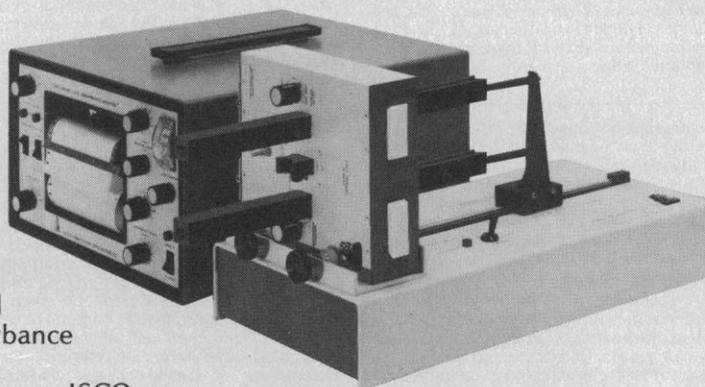
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#### ASSISTANT PROFESSOR

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**Dr. G. Robin South, Head  
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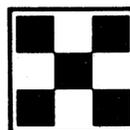
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**SUPERVISORY PHYSICAL SCIENTIST.** The Great Lakes Environmental Research Laboratory of the National Oceanic and Atmospheric Administration (NOAA), in Ann Arbor, Michigan, is seeking a senior level scientist to manage its Special Projects Group. The incumbent will direct a group of scientists and technicians involved with research on limnologic and oceanographic systems, Great Lakes and marine resources, and water related activities to develop and test improved simulation and prediction models, data bases, and other environmental information to support management decisions by government and private organizations. This position is in the competitive service and may be filled at either the GS-15 or GS-14 level. Entrance level salaries are \$44,547 and \$37,871 per annum, respectively. Future salary adjustments are subject to the Merit Pay System. **QUALIFICATIONS:** B.S. or higher degree in oceanography, meteorology, or the physical sciences. In addition, 3 years of professional experience which has equipped the candidate with the knowledge necessary to perform the above duties. **SELECTIVE FACTORS:** applicants must have demonstrated research experience in environmental engineering, water chemistry, oceanography, limnology, or systems engineering relative to the numerical modeling of limnological or marine systems. Additional technical information may be obtained from: **Dr. Eugene J. Aubert, telephone: 313-668-2245 or FTS 378-2245. TO APPLY:** current or former federal employees should submit SF-171 and CD-332 (Employee Appraisal). Form CD-332 may be obtained by telephoning: 303-497-6332 or FTS 320-6332. Applicants not employed by the federal government should submit a complete application package for "Physical Science Positions-1300." These forms may be obtained from the nearest Office of Personnel Management (OPM). **ALL APPLICANTS MUST SUBMIT THEIR PUBLICATIONS RECORD.** All applications should be submitted to: NOAA/NTIA, Personnel Services Division (R566), attention: M. Mann, Boulder, Colorado 80303. Reference vacancy number NOAA/ERL 80-372. Applications must be received by 28 November 1980 to receive consideration. An Equal Opportunity Employer.

## POSITIONS OPEN

### ASSOCIATE DIRECTOR MONTANA AGRICULTURAL EXPERIMENT STATION

Applications/nominations invited for associate director, Montana Agricultural Experiment Station, Montana State University. Responsibilities include planning, development, direction, and administration of research program. Program encompasses 11 on-campus departments; seven research centers; and cooperates with USDA-SEA-AR and CES.

Terminal degree and proven scholarly and professional competence required; administrative experience at an Agricultural Experiment Station desired.

Position available 1 January 1981. Applications, accompanied by current curriculum vitae and names of three references must be received by 1 December 1980. *Montana State University is an Affirmative Action/Equal Opportunity Employer.*

Send nominations and applications to:

**D. E. Mathre, Chairman**  
Associate Director Search Committee  
202 Linfield Hall  
Montana State University  
Bozeman, Montana 59717  
Telephone: 406-994-4832

### ASSOCIATE DIRECTOR, COGNITIVE PSYCHOPHYSIOLOGY LABORATORY

The Department of Psychology at the University of Illinois, Champaign-Urbana, is seeking an associate director for the Cognitive Psychophysiology Laboratory (CPL). The associate director will be appointed in the department at a rank and tenure status dependent on the individual's qualifications. The applicant will have the responsibility for on-going programs of research that focus on the use of event-related brain potentials in the study of cognitive function and human engineering. The associate director will be encouraged to develop his or her research program. Minimum qualifications include an earned doctorate and a substantial record of scholarly work and the ability to oversee an extensive computer-aided laboratory facility; supervise a staff of scientists, programmers, and technicians; and direct the relations of the CPL with federal agencies. Candidates whose primary interests are in psychophysiology, experimental psychology, or engineering psychology will be preferred. In any case, the academic excellence of the candidates will be the foremost criterion. The position is available on 21 August 1981, though a later appointment is possible. The salary will depend on the individual's qualifications. For full consideration, applications must be received by 1 February 1981. Send letter of application and curriculum vitae, and arrange for three letters of reference to be sent to: **Dr. Emanuel Donchin, Head, Department of Psychology, University of Illinois, Champaign, Ill. 61820, or telephone: 217-333-3384.**

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

### CELL BIOLOGIST

Department of Cell Biology  
Baylor College of Medicine

Applications are invited from qualified individuals with postdoctoral experience to join the department in a tenure-track position. Research areas of particular interest include endocytosis, membrane biogenesis, membrane protein biochemistry, and membrane-cytoskeletal protein interactions, although other related areas will be considered. The applicant should be prepared to establish a productive, independent research program and participate in the cell biology graduate teaching program. Interested individuals should send a letter indicating their qualifications for the position, enclose current curriculum vitae, and list three or more persons who will act as referees, to: **Joseph Bryan, Department of Cell Biology, BAYLOR COLLEGE OF MEDICINE, Houston, Texas 77025.**

*Baylor College of Medicine is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL APPOINTMENT** to work on **REGULATION OF GONADOTROPIN ACTION IN OVARIAN CELL TYPES:** effects of estrogens, prolactin, and cyclic nucleotides. Strong background in female reproductive physiology and/or tissue culture technique is desired. Stipend: \$12,500 per year. Available: immediately and fall/winter 1980. Send curriculum vitae and references to: **Lutz Birnbaumer, Professor, Department of Cell Biology, BAYLOR COLLEGE OF MEDICINE, Houston, Texas 77030.**

*Baylor College of Medicine is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF), Division of Atmospheric Sciences, is seeking qualified candidates for a 1- or 2-year rotational appointment as **ASSOCIATE PROGRAM DIRECTOR FOR THE METEOROLOGY PROGRAM**, Grants Program Section. This position is excepted from the competitive civil service, EC-13/14 (equivalent to the GS-13/14), with a salary range of \$32,048 to \$49,229 per annum, based on qualifications and experience. Responsibilities include supplementing the scientific background of the program director and assisting in directing of program activities including allocation of resources, establishing overall goals and objectives, evaluating proposals, preparing recommendations for grants, and monitoring the progress of funded projects. Candidates should have a Ph.D. or its equivalent in meteorology and at least 4 years of research experience with some demonstrated administrative experience. Send résumé to: **National Science Foundation, 1800 G Street, NW, Washington, D.C. 20550, attention: E. Paul Broglio, Personnel Administration Branch, EX 80-23, by 31 December 1980. NSF is an Equal Opportunity Employer.**

### NATIONAL SCIENCE FOUNDATION PROGRAM DIRECTOR AND ASSOCIATE PROGRAM DIRECTOR

The National Science Foundation (NSF), Division of Environmental Biology, is seeking candidates for 1- or 2-year rotation appointments as program officers in several disciplines. Program officers administer programs of basic research grant support, including advising applicants, reviewing proposals, and other administrative duties. These positions are in the excepted service equivalent to the GS-13/14/15, and salaries range from \$32,048 to \$50,112.50 per annum. Candidates must have a Ph.D. or equivalent, at least 6 to 8 years of research experience, and be active in the relevant field. Supervisory or management experience is highly desirable. Program director positions are open in ecology, systematic biology, population biology, and physiological ecology, and an associate program director position in systematic biology. Send résumés to: **NSF, Personnel Administration Branch, 1800 G Street, NW, Washington, D.C. 20550, attention: E. Paul Broglio. For further information, telephone: 202-357-7841. NSF is an Equal Opportunity Employer.**

### Department of Psychology Cornell University BIOPSYCHOLOGIST

The Department of Psychology of the College of Arts and Sciences at Cornell University seeks candidates for a tenured associate professor-level position, effective at the start of 1981-1982 academic year. We are looking for a biopsychologist with a major interest in the neural bases of behavior.

Candidates with experience appropriate for a position at this level should submit complete curriculum vitae, reprints and preprints of completed research, and letters of recommendation sent directly from three referees to:

**Biopsychology Search Committee**  
Department of Psychology  
Uris Hall  
Cornell University  
Ithaca, New York 14853

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

### Department of Psychology Cornell University Professional Position in Experimental Psychology—Level Open

The Department of Psychology of the College of Arts and Sciences at Cornell University has an opening effective at the start of the 1981-1982 academic year for an experimental psychologist interested in cognition, language, and/or perception. People with cross-cultural, developmental, or differential perspectives are especially encouraged to apply. This is a tenure-track position; the level of appointment is open. Candidates should submit curriculum vitae, reprints or preprints of recent research as soon as possible, and arrange that at least three letters of recommendation be sent to:

**Experimental Psychology Search Committee**  
Department of Psychology  
Cornell University  
Uris Hall  
Ithaca, New York 14853

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

## POSITIONS OPEN

**BIOCHEMIST—FOOD SCIENTIST.** Recent Ph.D. desired for position in area of dietary fiber research related to aspects of foods, metabolism, and nutrition. Individual with strong background in biochemistry and interest in food science and nutrition preferred. American citizenship is required for this federal government position. Successful candidate would start at the GS-11 level, approximately \$22,400 per year. Interested persons should send curriculum vitae to: **Dr. F. R. Dintzis, Cereal Science and Foods Laboratory, Northern Regional Research Center, SEA-AR, USDA, 1815 North University Street, Peoria, Illinois 61604.** *The Northern Laboratory, which employs about 150 scientists, is one of the regional centers of the USDA and is an 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.*

The **DEPARTMENT OF GEOLOGY**, Louisiana State University (LSU) has three tenure-track assistant professorships for fall 1981. (i) **STABLE ISOTOPE GEOCHEMISTRY**, (ii) **ORGANIC GEOCHEMISTRY**, and (iii) **SEISMOLOGY OR PALEOMAGNETISM**. Highly qualified individuals will be considered from other fields or at higher entrance levels. These positions will include responsibility for teaching and development of a strong research program. Please submit curriculum vitae, statement of research and teaching interests, and arrange for reference letters to be sent to: **Rex Pilger, Search Committee, Department of Geology, LSU, Baton Rouge, La. 70803.** Deadline: 5 January 1981. *LSU is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS AVAILABLE

January, 1981

THE TERRESTRIAL ECOLOGY DIVISION OF THE CENTER FOR ENERGY AND ENVIRONMENT RESEARCH OF THE UNIVERSITY OF PUERTO RICO has two openings. Candidates with a Ph.D. are preferred, but individuals with a masters degree and experience will also be considered for both positions. A reading and speaking knowledge of English and Spanish is desirable.

• **PLANT ECOLOGIST**—to direct vegetation programs and conduct plant community studies in rain forest and other terrestrial habitats on Puerto Rico. Candidates must have previous tropical experience.

• **INVERTEBRATE ECOLOGIST**—to conduct qualitative and quantitative investigations of invertebrate communities and selected invertebrate groups in rain forest and other terrestrial habitats. Candidates must have broad taxonomic training. Tropical experience is preferred.

Interested individuals should submit a resume along with the names, addresses, and phone numbers of three references to: **Dr. Douglas P. Reagen, Head, Terrestrial Ecology Division, CEER, Caparra Heights Station, San Juan, Puerto Rico 00935.**

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AFFIRMATIVE ACTION EMPLOYER.

## POSITIONS OPEN

**STATE UNIVERSITY OF NEW YORK AT BUFFALO** announces the search for the **CHAIRMAN** of the Department of Physiology. The department has 21 faculty lines and occupies space of 51,000 square feet. The department gives courses in physiology for students of medicine and dentistry as well as for graduate and undergraduate students. The research areas in which the department has excelled are respiratory physiology, neurophysiology, and cell physiology. The chairman should have an outstanding international reputation as an investigator in physiology and he (or she) should be experienced in teaching and administration. Persons interested in this position may send their personal data to: **Dr. Felix Milgrom, Chairman of the Search Committee, School of Medicine, State University of New York at Buffalo, 203 Sherman Hall, Buffalo, N.Y. 14214.** *State University of New York is an Equal Opportunity/Affirmative Action Employer and no one will be subject to discrimination on the basis of age, color, national origin, race, religion, or sex.*

The **DEPARTMENT OF CHEMISTRY** of the University of Chicago invites applications from outstanding individuals for **faculty positions in all branches of chemistry**; specific emphasis will be given to structural inorganic and synthetic organic chemistry. Qualified applicants should submit curriculum vitae, a list of publications, and a succinct outline of research to be undertaken and should arrange for three letters of recommendation to be sent to: **Professor John C. Light, Chairman, Department of Chemistry, The University of Chicago, 5735 South Ellis Avenue, Chicago, Illinois 60637.** *An Equal Opportunity/Affirmative Action Employer.*

## COMMUNITY ECOLOGY

A 4-month teaching postdoctoral position in the Department of Biology, McGill University, is available as of 1 January 1981. Candidate will teach a three-credit course in community ecology. Apply by 30 November with curriculum vitae and names and telephone numbers of three referees to: **Dr. Douglas Boucher, Department of Biology, McGill University, 1205 Avenue Docteur Penfield, Montreal, Quebec, Canada H3A 1B1.**

## POSITIONS OPEN

### CHAIRMAN, DEPARTMENT OF PATHOLOGY

The Georgetown University Schools of Medicine and Dentistry are conducting a search for qualified candidates for professor and chairman of the Department of Pathology. Candidates should have the appropriate credentials and experience in research, administration, and teaching.

Interested candidates or those interested in proposing candidates for this position should send a letter and brief résumé to:

**John Dillon, M.D.**  
**Chairman, Pathology Search Committee**  
**605 Kober Cogan Building**  
**Georgetown University Medical Center**  
**3800 Reservoir Road, NW**  
**Washington, D.C. 20007**

*Georgetown University is an Affirmative Action/Equal Opportunity Institution and Employer.*

**DIRECTOR OF ANATOMIC PATHOLOGY**—University of Massachusetts Medical School seeks a senior pathologist who will assume direct responsibility for surgical autopsy pathology. Academic status of full professor. *Applications from women and minority groups will be especially welcome.* Write to: **Dr. G. Majno, Department of Pathology, UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL, 55 Lake Avenue North, Worcester, Mass. 01605.** *An Affirmative Action/Equal Opportunity Employer.*

**FUNGAL GENETICIST POSITION**—Assistant research scientist to develop biochemical and genetic information on an entomogenous fungus. Ph.D. in mycology, microbiology, or related field. Knowledge of biochemical technique (electrophoresis), cytology, and electron microscopy required. Non-tenure-accruing position with the University of Florida supported by NSF as a 2-year appointment. Salary of \$20,000. Send résumé, statement of research interests, and three letters of reference to: **Dr. Clayton W. McCoy, University of Florida, IFAS, Agricultural Research and Education Center, P.O. Box 1088, Lake Alfred, Florida 33850.** *Florida is an Affirmative Action/Equal Opportunity Employer.*

## ESO FELLOWSHIPS 1981-1982

The European Southern Observatory (ESO) intends to award up to six fellowships tenable in the ESO Scientific-Technical Center which is located in Garching near München.

The main goals of the Center are as follows:

- to carry out a program of development of auxiliary instrumentation for the La Silla telescopes;
- to develop plans for future telescopes involving new technology;
- to make studies in observational and theoretical astrophysics so that the observing facilities may be used in an optimal way;
- to provide data reduction facilities to users of the ESO instruments;
- to provide photographic facilities for atlases of the southern sky;
- to foster cooperation in astronomy and astrophysics in Europe.

Most of the scientists in the Center come from the Member States of ESO, but several are from other countries. At present, the Member States of ESO are: Belgium, Denmark, the Federal Republic of Germany, France, the Netherlands and Sweden. In addition to regular staff members, the Center comprises visiting scientists and post-doctoral fellows.

ESO facilities include the La Silla Observatory in Chile with its six telescopes in the range of 0.9 to 3.6 m, as well as a 1 m Schmidt and some smaller instruments. In Garching, extensive measuring, image processing and computing facilities will be available.

Applicants normally should have a doctorate. The basic monthly salary will be not less than DM 3121. The fellowships are granted for one year, beginning October 1, 1981, with reasonable possibilities for renewal for a second year. Applications should be submitted to ESO not later than December 31, 1980. Applicants will be notified by the end of February 1981. The ESO Fellowship Application form should be used and be accompanied by a list of publications. In addition, three letters of recommendation should be obtained from persons familiar with the scientific work of the applicant. These letters should reach ESO not later than December 31, 1980.

Enquiries, requests for application forms and applications should be addressed to:



European Southern Observatory  
Fellowship Program  
Karl-Schwarzschild-Strasse 2  
D-8046 GARCHING B. München  
Federal Republic of Germany

## POSITIONS OPEN

### UNIVERSITY OF CALIFORNIA, SAN DIEGO SCHOOL OF MEDICINE ASSOCIATE SPECIALIST DEPARTMENT OF PSYCHIATRY

Ph.D. level individual needed for neurophysiological and neuroanatomical research laboratory operation and maintenance, including computer operation, programming, and interfacing with neurophysiological preparation, experience in acute and chronic microelectrode fabrication and implantation. Minimum of 6 years of experience in electronics and neurophysiological data analysis. Responsibility for operation and maintenance of single neuron recording laboratories, equipment operation and maintenance, including troubleshooting of oscilloscopes, stimulators, Tektronix 9900 microprocessors. Skill in programming and interfacing of microprocessors and small laboratory computer. Expertise in small animal surgery and chronic microelectrode implantation techniques essential. Extensive background in statistics and research design required. Expertise in computer graphics, especially three-dimensional reconstruction from serial sections, in addition to standard computer graphics and programming and use. Will train graduate students, postdoctoral scholars, and others in electronics, statistics, computer technology, and elementary operation and programming of laboratory computers, neurophysiological data collection, analysis, and interpretation.

Salary: related to academic rank and step within the established salary schedule of the University of California, San Diego.

*The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer. Send curriculum vitae to:*

Lewis L. Judd, M.D.  
Chairman, Department of Psychiatry (M-003)  
University of California, San Diego  
La Jolla, California 92093

### CHAIRPERSON DEPARTMENT OF ZOOLOGY ARIZONA STATE UNIVERSITY

Applications are invited from senior faculty for the position of professor and chairperson of the Department of Zoology, Arizona State University, Tempe, Arizona. The department consists of 30 faculty, 70 graduate students, and undergraduates with majors in biology, zoology, entomology, and wildlife biology. Strong graduate programs exist in the areas of behavior, developmental biology, ecology, genetics, physiology, and systematics. Desert environments are emphasized in many of these research programs. Applications are sought from individuals who have demonstrated excellence in teaching, scholarly productivity in an active research program, and the ability to provide administrative leadership. The position will be available 1 July 1981. Inquiries, nominations, or letters of application accompanied by curriculum vitae and listing names of three or more references should be sent by 15 January 1981 to:

Dr. Neil F. Hadley  
Chairperson, Search Committee  
Department of Zoology  
Arizona State University  
Tempe, Arizona 85281

*Arizona State University is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and members of minority groups.*

**DEAN**, Dartmouth Medical School. Nominations and applications are invited for the chief executive officer, of Dartmouth Medical School. Applicants should have strong academic credentials and administrative expertise. Nominations, applications, and inquiries should be directed, before 15 November 1980, to: Edward D. Harris, Jr., M.D., Chairman, Dean's Search Committee, Dartmouth-Hitchcock Medical Center, Hanover, N.H. 03755. *An Affirmative Action/Equal Opportunity Employer, M/F.*

**HEAD**, Department of Fishery and Wildlife Biology, Colorado State University (CSU). Ph.D. in fisheries, wildlife, or related field; demonstrated leadership and administrative ability; experience in teaching, research, extension. Preference given to planning ability, service in professional societies, work experience with natural resource agency, demonstrated productivity, and national reputation. Salary negotiable. Apply by 30 November 1980. Application materials available from: Dr. S. A. Flickinger, Department of Fishery and Wildlife Biology, CSU, Fort Collins, Colo. 80523. Telephone: 303-491-5657. *Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### CHAIRMAN DEPARTMENT OF BIOLOGY

Davidson College is conducting a search for a chairman of its Department of Biology. The successful candidate will possess the experience, the capacity, and the imagination (i) to teach and to conduct personal research with undergraduates, (ii) to administer a small department offering instruction in botany and zoology, (iii) to promote high-quality student-faculty research throughout the department, and (iv) to obtain funding for personal research, for departmental equipment, and for curriculum improvements.

A candidate with research specialization in molecular biology, especially plant molecular biology, is preferred. The position is available 1 August 1981. Candidates should send a letter of application and a résumé including three references by 28 November 1980 to: Dr. J. N. Burnett, Associate Dean of the Faculty, Davidson College, P.O. Box 2497, Davidson, North Carolina 28036.

**FACULTY POSITION—ANALYTICAL CHEMIST, BIOCHEMIST, OR COMBINATION.** James Madison University (JMU), anticipates an opening for a tenure-track assistant professor, September 1981. Participation in junior/senior level courses, introductory courses, and associated laboratories is required. Candidates must have a firm commitment to undergraduate education and are expected to establish a research program which can be carried out with the assistance of undergraduates. JMU, with an enrollment of about 8500, is a coeducational, primarily undergraduate, state-supported university, located in the Shenandoah Valley. A letter of interest, résumé with bibliography, university transcripts, including proof of Ph.D. degree, and three letters of recommendation should be received no later than 1 December 1980 by: Dr. J. J. Leary, Search Committee, Chemistry Department, James Madison University, Harrisonburg, Virginia 22807. *An Affirmative Action/Equal Opportunity Employer.*

**GEOPHYSICIST.** The Alaska Field Office of the Office of Marine Pollution Assessment, National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, in Juneau, Alaska, is seeking a geophysicist with scientific expertise in earthquake hazards evaluation. The assignee will serve as a staff specialist monitoring research tasks among approximately eight seismological projects, ensuring proper coordination and integration with other disciplines. Provides technical review and evaluation of studies and advises the staff geologist on geophysical aspects of shipboard field surveys. Only employees of state or local governments or institutions of higher education who can obtain a 2-year leave of absence are eligible to apply. Assignee will remain an employee of his/her respective organization. Base salary range is \$22,486 to \$35,033 per annum. Final salary determination will be based on candidate's current salary and qualifications. Reimbursement for salary, travel, benefits, cost-of-living adjustment, moving expenses, and so forth is negotiable between employee's organization and NOAA. To apply, submit an SF-171 "Personal Qualifications Statement," which can be obtained from any federal office or by telephoning: 303-497-6586, to: NOAA/NTIA, Personnel Services Division, R562, Boulder, Colorado 80303; attention: Area Personnel Office. Applications must be received by 24 November 1980 in order to receive consideration. *An Equal Opportunity/Affirmative Action Employer.*

### IMMUNOLOGIST—ASSISTANT PROFESSOR

The University of Southern California announces the availability for fall 1981 of a tenure-track assistant professorship in biological sciences. We desire a person with strong background in basic and applied immunology. Postdoctoral training is necessary. The successful candidate will be expected to establish an independent research program of high quality and to teach courses in the areas of undergraduate and graduate immunology. While not required, we would prefer to appoint a candidate whose active interests also include the neural sciences. Please submit curriculum vitae, names and addresses of three referees, and a statement of research and teaching interests by 1 December 1980 to:

Dr. Bernard C. Abbott, Chairman  
Department of Biological Sciences  
University of Southern California  
University Park  
Los Angeles, Calif. 90007

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

## POSITIONS OPEN

**HEAD OF TUMOR VIROLOGY.** The University of Texas System Cancer M. D. Anderson Hospital and Tumor Institute invites applications for head of the Department of Tumor Virology. This person is expected to provide leadership in the development of research programs in the fundamental aspects of tumor virology. Please send curriculum vitae and list of publications by 1 December 1980 to: Dr. Stuart Zimmerman, Department of Biomathematics, The University of Texas System Cancer Center M. D. Anderson Hospital and Tumor Institute, 6723 Bertner Avenue, Houston, Texas 77030.

### HEADSHIP DEPARTMENT OF BOTANY UNIVERSITY OF ILLINOIS

The Department of Botany seeks a head beginning summer 1981, or at the latest in fall 1981, subject to budgetary approval. The head will assume responsibility for the administration of a department of about 25 faculty members involved in undergraduate and graduate teaching, research, and service. This person should have the Ph.D. degree and be a distinguished plant scientist, preferably in the area of plant physiology although other qualified applicants will be considered. Candidates with demonstrated administrative capability are especially invited to apply. The appointment will be at the tenured full professor level, with salary open to negotiation. For a candidate to receive full consideration, complete curriculum vitae and the names of at least three scientists who have agreed to serve as references should be submitted before 1 December 1980 to:

Botany Headship Search Committee  
c/o Professor Joseph R. Larsen, Director  
School of Life Sciences  
393 Morrill Hall  
University of Illinois at Urbana-Champaign  
Urbana, Ill. 61801  
Telephone: 217-333-3044

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

### HARVARD MEDICAL SCHOOL JUNIOR LEVEL FACULTY APPOINTMENT Department of Neurobiology

M.D. or Ph.D. with 3 to 5 years of experience with lobster nerve-muscle preparations to perform collaborative physiological experiments in ongoing research project. Must have experience with voltage clamp studies on muscle fibers and all routine intracellular physiological measurements.

Starting salary range: \$20,000 plus per year.

Contact: E. A. Kravitz, telephone: 617-732-1753.

### MOLECULAR BIOLOGY MICHIGAN STATE UNIVERSITY

The Department of Biochemistry, Michigan State University (MSU), invites applications for several tenure-track faculty positions, one of which will be at a senior level. We encourage applications from candidates with strong credentials in areas of molecular biology such as regulation of gene expression and recombinant DNA technology. All appointments will be made at competitive salary levels and will include laboratory space for major size programs. Evidence of ability to teach undergraduate, graduate, and professional courses will be evaluated. Inquiries regarding the senior level position should be directed to: Chairman, Department of Biochemistry. For full consideration at the assistant professor level, send curriculum vitae, reprints, in press manuscripts, a statement of research and teaching interests, and written recommendations from three references by 1 January 1981 to: Chairman of Molecular Biology Search Committee, Department of Biochemistry, Michigan State University, East Lansing, Michigan 48824.

*MSU is an Affirmative Action/Equal Opportunity Institution.*

Applications are sought from M.D.'s and Ph.D.'s for full-time positions in the DEPARTMENT OF PATHOLOGY at the level of assistant, associate, or full professor, depending on qualifications and experience. Responsibilities will include teaching and hospital service. The pursuit of individual research interests is required. Send curriculum vitae and references to:

Joseph Wiener, M.D., Chairman  
Department of Pathology  
Wayne State University School of Medicine  
540 East Canfield Avenue  
Detroit, Michigan 48201

*An Equal Opportunity/Affirmative Action Employer*

# HEALTH SCIENTIST ADMINISTRATOR

## Pharmacological Sciences Program

Applications and nominations are invited for the Career Civil Service position of Program Administrator, Pharmacological Sciences Program, National Institute of General Medical Sciences, National Institutes of Health, Public Health Service. This program is responsible for the support of research project grants, research training grants, and research fellowship awards in the broad area of pharmacological sciences including molecular pharmacology, pharmacology of receptors, drug metabolism and disposition, pharmacokinetics, clinical pharmacology, and biorelated and synthetic organic chemistry.

The incumbent will be responsible for performing a variety of functions related to extramural grant and fellowship administration. In addition, he/she will have responsibility for providing program assessment and evaluation activities related to significant policy decisions by the Director, Pharmacological Sciences Program.

Qualifications: *Required:* Ph.D. or M.D. degree, equivalent training, or equivalent combination of education and experience in the pharmacological or related biomedical sciences *plus* experience at the postdoctoral level demonstrating independent work in planning, organizing, and conducting research in the pharmacological sciences. Evidence of a broad knowledge of modern pharmacology, biochemistry and related fields is desired. Candidates must have a Health Scientist Administrator notice of rating or have applied for a rating from the Office of the Special Examiner (OSE), National Institutes of Health, Building 31, Room B3C21, Bethesda, MD 20205.

The position will be filled at the Career Civil Service levels of GS-12 or GS-13 with a salary range of \$26,951 to \$41,660, or within the Commissioned Corps of the U.S. Public Health Service, depending on qualifications. Interested candidates should submit a Personal Qualifications Statement (SF-171), a curriculum vitae, and bibliography by December 12, 1980, to: Sharon Posey, NIGMS Personnel Office, 5333 Westbard Avenue, Room 436, Bethesda, Maryland 20205, (301) 496-7161. An Equal Opportunity Employer.

NATIONAL INSTITUTES  
OF HEALTH

**Fellowship:** offered to a young optical engineer or physicist 1-year contract, renewable.

**Education:** University degree in optics or physics.

**Assignment:** Within the optics section of the Instrumentation Group:

—experimental study of application of fiber optics to astronomical instrumentation.

Besides this main task, it will be asked to perform measurement of transmission or reflectance of astronomical optical elements using a new type of spectrophotometer. There will also be opportunities to gain experience in optical design and software development.

**Duty Station:** Garching b. München.

**Remuneration:** not less than DM 3.121,—.

Enquiries, requests for application forms and applications should be addressed before Oct. 30, 1980 to:



European Southern Observatory  
Fellowship Program  
Karl-Schwarzschild-Strasse 2  
D-8046 GARCHING B. München  
Federal Republic of Germany

### POSTDOCTORAL RESEARCH AWARDS

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The National Research Council will make awards in 1980 under the Resident Associateship Program, which provides awardees with opportunities to conduct experimental and theoretical research as visiting scientists and engineers in the fields of:

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Applied Mathematics  
Probability Theory and Stochastic Processes  
Combustion Research  
Fluid Mechanics  
Continuum Mechanics  
Materials Sciences  
Nuclear and Radiation Physics  
Physical Chemistry  
Quantum Chemistry

in the Laboratory complex located in the beautiful Chesapeake Bay country of Maryland, within easy driving distance of the metropolitan centers of Baltimore, Philadelphia, and Washington, D.C.

Some programs are open to senior investigators as well as recent doctorates.

Further details on research programs may be obtained from: **Dr. L. J. Puckett, telephone: 301-278-2236**, at the Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland.

For application materials and details on specific research opportunities, write promptly giving areas of interest to:

Associateship Office (608-E1)  
NATIONAL RESEARCH COUNCIL  
2101 Constitution Avenue, NW  
Washington, D.C. 20418

Postmark deadline for application is 15 January.

## MARINE RADIOCHEMIST

The International Atomic Energy Agency seeks for the International Laboratory of Marine Radioactivity in Monaco a *Marine Radiochemist* at the Assistant Officer's level (P-1) to perform laboratory and field research on the behaviour of radionuclides in the marine environment with special emphasis on transuranics. Ph.D. or equivalent in chemical oceanography, radiochemistry, radioecology required. Initial contract two years, total emoluments US\$ 24.588,40 at single rate or US\$ 25.147,80 at dependency rate per annum. Travel and removal expenses paid. Six weeks' annual leave. Send curriculum vitae under VN 62/80 to the Division of Personnel, International Atomic Energy Agency, P.O. Box 100, A-1400 Vienna, Austria.

## POSITIONS OPEN

### POSITION IN MALACOLOGY National Museum of Natural History Smithsonian Institution

The Department of Invertebrate Zoology anticipates a tenure-track opening on the scientific staff for a freshwater or terrestrial malacologist to function as an associate curator-researcher at the GS-11 level (\$20,611) beginning 1 February 1981. We are particularly interested in all candidates with a Ph.D. and strong backgrounds in current systematic biology, molluscan anatomy, and evolutionary biology. Send curriculum vitae, copies of publications, and statement of long-term research goals to: **Dr. Richard S. Houbbrick, Search Committee, Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.**

*The Smithsonian Institution is an Equal Opportunity Employer.*

### MARINE RESEARCH ASSOCIATE III

A postdoctoral physical oceanographer position is immediately available for studies of the large-scale and mesoscale processes in the oceans. To date, research in group (as part of the POLYMODE program) has focused upon the use of lagrangian drifters (SOFAR floats) for exploratory and dynamical studies of oceanic variability on a variety of space and time scales. In addition to participating in collaborative studies, appointee is invited to develop specific areas of research whether it involves data analysis, numerical simulation studies, or theoretical investigations. This position might be of interest to applicants with a strong background in fluid dynamics, meteorology, physics, and so forth. Applicants should submit their curriculum vitae to: **Dr. T. Rossby, Graduate School of Oceanography,**

**UNIVERSITY OF RHODE ISLAND  
Kingston, Rhode Island 02881**

*An Affirmative Action/Equal Opportunity Employer,  
M/F*

### UNIVERSITY OF ARIZONA

The DEPARTMENT OF PHYSICS at the University of Arizona seeks applicants for two tenure-track positions. It is expected that at least one of these positions will be filled at the level of assistant professor, but applications for higher level positions are also invited. Serious consideration, without restriction to fields of specialization, will be given to every qualified candidate. Curriculum vitae and names of references should be submitted by 15 January 1981 to: **Chairman, Department of Physics, University of Arizona, Tucson, Arizona 85721.** *The University of Arizona is an Equal Opportunity/Affirmative Action Employer under state and federal laws and regulations including Title IX, 1972 Educational Amendments.*

### PHYSIOLOGIST

The Geriatric Research, Education, and Clinical Center (GRECC) of the Minneapolis Veterans Administration (VA) Medical Center invites applications for the position of physiologist. We are seeking a highly qualified individual with a strong commitment to aging research. The position is available immediately.

Preference will be given to candidates with records of research accomplishment. The appointee will be expected to carry on an independent research program and/or collaborate in interdisciplinary, neurogerontologic research projects with members of the GRECC research team. Applicants should submit curriculum vitae and a summary of research goals to: **Dr. Francis J. Pirozzolo, GRECC-127F, VA Medical Center, 54th Street and 48th Avenue South, Minneapolis, Minn. 55417.**

**POSTDOCTORAL POSITION** available January 1981, for research on mechanism of nucleoside diphosphate sugar: NAD 2-glycosyl oxidoreductase; its role in metabolism of ethanalamine- and galactofuranosyl-containing glycopeptide of *Penicillium*. Applicant should have a Ph.D. degree in biochemistry or chemistry; should have experience with proteins and enzymes. Desired experience in C-13 NMR. Starting salary: \$11,000 to \$12,500 with 1 or 2 years of support available. Interested candidates should send résumé and names of three references to: **Dr. John E. Gander, Department of Biochemistry, University of Minnesota, 1479 Gortner Avenue, St. Paul, Minn. 55108.** *The University of Minnesota is an Equal Opportunity/Affirmative Action Employer and Educator, and specifically solicits applications from women and minorities.*

## POSITIONS OPEN

### PHYSIOLOGIST

Adjunct assistant/associate/full professor of Physiology with interest in microcirculation and/or peripheral circulation to participate in development of microcirculatory research unit at Veterans Administration Hospital. Applicants are expected to have strong background and active research program. Opportunities available for teaching at undergraduate and graduate levels. Interested persons should apply to: **Dr. Paul Johnson, Department of Physiology, University of Arizona, College of Medicine, Tucson, Ariz. 85724,** detailing background and current research activities. *The University of Arizona is an Equal Opportunity/Affirmative Action Employer.*

### PLANT CELL BIOLOGIST

The Department of Developmental and Cell Biology, University of California, Irvine, is seeking a plant cell biologist at the assistant professor level who specializes in plant somatic cell genetics, plant molecular genetics, or plant cell morphogenesis. Preference will be given to an individual working on higher plants. The candidate is expected to conduct high-quality research and teach at both graduate and undergraduate levels. At least 1 year of postdoctoral experience is desired.

*An Affirmative Action/Equal Opportunity Employer.*

Address all correspondence to:

**Chairman, Plant Cell Biology Search Committee  
Department of Developmental and Cell Biology  
University of California, Irvine  
Irvine, Calif. 92717**

**PLANT GENETICIST.** Career federal service. Develop research program involving genetic and breeding studies pertaining to introduction, classification evaluation, use, selection of corn germ plasm, and development of underlying theory to enhance practical objectives. Located at Iowa State University Campus, Ames, Iowa. GS-11/12/13; salary based on qualifications and experience. For applications: **J. Brooks, USDA-SEA-AR-B16, 2000 West Pioneer Parkway, Peoria, Ill. 61615.** Telephone: 309-671-7319. *Equal Opportunity Employer.*

**PLANT VIRUS VECTOR POSITION—Assistant research scientist** to develop epidemiological information on aphid vectors of citrus tristeza virus. Ph.D. degree in entomology or closely related field. Knowledge of biochemical technique, general entomology, virology, insect pathology, and electron microscopy is required. Nontenure-accruing position with the University of Florida supported by USDA/SEA with a 1-year appointment and possible renewal. Salary: \$22,000. Send letter of application, biographical information on a prescribed application form, transcripts, other information, and three letters of reference to: **Dr. Richard Lee, Agricultural Research and Education Center, P.O. Box 1088, Lake Alfred, Fla. 33850.** *University of Florida is an Affirmative Action/Equal Opportunity Employer.*

### POSTDOCTORAL—CELL CULTURE

NIH postdoctoral training stipend for work with group studying hemopoietic cell senescence. Hemopoietic cell cultures primary but will relate to aging and cell senescence studies involving cell transplantation, lymphocyte mitogenesis, and cell cycle-active drugs. Curriculum vitae and references to: **Dr. Norman Wolf, Department of Pathology, University of Washington, School of Medicine, Seattle, Wash. 98195.** Telephone: 206-543-8376.

### POSTDOCTORAL POSITIONS ENDOCRINE-REPRODUCTIVE BIOLOGY

The Endocrine-Reproductive Biology Group at the Worcester Foundation for Experimental Biology announces the availability of postdoctoral fellowships. These are for 1 year with possible renewal; the initial stipend is \$12,500. Applicants should submit, in duplicate, their curriculum vitae, a brief summary of research interests, a synopsis of the Ph.D. thesis research, and the names of three persons from whom references may be requested. Candidates should indicate the research areas in which they wish to work if a fellowship is awarded. Applications should be sent to:

**Chairman, Search Committee  
ENDOCRINE-REPRODUCTIVE  
BIOLOGY FELLOWSHIP PROGRAM  
c/o Personnel Office  
Worcester Foundation for Experimental Biology  
222 Maple Avenue  
Shrewsbury, Mass. 01545**

*An Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

**POSTDOCTORAL FELLOW:** Ph.D. in pharmacology. Grow samples of tissues from plants and extract, identify, and measure medicinals and chemicals using advanced analytical instruments; participate in discussions as to experiments to be performed, methods and instruments to be used, and laboratory facilities required; 40 hours per week, \$14,000 per year plus liberal benefits. Contact in writing: **Personnel Office, W. Alton Jones Cell Science Center, Old Barn Road, Lake Placid, N.Y. 12946;** telephone: 518-523-2427. *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available January 1981, for research on the metabolism and biosynthesis of carnitine. Applicant should have a Ph.D. degree in biochemistry or nutrition. Experience beyond degree not necessary. Starting salary: \$11,000 to \$12,500 with 2 years of support available. Candidates should send résumé and names of three references to: **Dr. L. M. Henderson, Department of Biochemistry, University of Minnesota, 1479 Gortner Avenue, St. Paul, Minn. 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

**POSTDOCTORAL POSITIONS** available immediately for studies involving preparation of monoclonal antibodies to RNA polymerase and cAMP receptor protein as probes of structure and function. Salary will be commensurate with experience. Send curriculum vitae and names of three references to: **Dr. J. S. Krakow, Department of Biological Sciences, Hunter College of City University of New York, 695 Park Avenue, New York, N.Y. 10021.**

**POSTDOCTORAL POSITION** available immediately. Involves studies on normal differentiation and chemical carcinogenesis of transitional epithelium of urinary bladder in vitro. Preference would be given to a hard-working individual holding a Ph.D. in cell biology or a related discipline. The applicant must be proficient in writing, electron microscopy, and have an interest in mammalian tissue culture. The stipend available will be in accord with current NIH postdoctoral fellowship rates. Please apply to: **Dr. Francis J. Chlapowski, Department of Biochemistry, UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL, 55 Lake Avenue North, Worcester, Mass. 01605.** *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** to study the pathogenesis of *Treponema pallidum* disease including surface characteristics of the spirochete and biochemical-molecular properties of the host-parasite interaction. Send curriculum vitae and letters of reference to: **Joel B. Baseman, Department of Microbiology, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, Texas 78284.** *An Affirmative Action/Equal Opportunity Employer.*

### POSTDOCTORAL POSITION— ENVIRONMENTAL CHEMISTRY

Position in ongoing program investigating the fate and effects of heavy metals from coal ash in southeastern aquatic systems. Candidate must have a thorough knowledge of analytical techniques for heavy metals in environmental samples. A knowledge of thermodynamic chemical models and the chemistry of soft waters are desirable. Appointment is for 1 year with the possible extension to an additional year. Salary: approximately \$15,000 per annum. Applicant must be a U.S. citizen. Send résumé and two letters of reference to:

**James Alberts  
University of Georgia  
Savannah River Ecology Laboratory  
P.O. Drawer E  
Aiken, S.C. 29801**

*An Equal Opportunity/Affirmative Action Institution*

**POSTDOCTORAL POSITION.** Immediate opening for Ph.D. in the physical sciences to participate in an HHS-supported training program. The program seeks to train highly qualified scientists in medical applications of ionizing radiation through formal courses, participation in seminars, and involvement in research. Research projects include development of x-ray and gamma-ray imaging devices, development of short-lived radiopharmaceuticals, applications of computer science, and in vivo studies of tracer kinetics. Address correspondence to: **Dr. Gordon L. Brownell, Physics Research Laboratory, Massachusetts General Hospital, Fruit Street, Boston, Mass. 02114.**

## VISITING SCIENTIST

The Upjohn Company has a post-doctoral opening in its Hypersensitivity Diseases Research area. The individual selected will study mediators of immediate hypersensitivity, possibly including the pharmacologic properties of the leukotrienes and their interactions with other mediators, the biosynthesis and metabolic fate of the leukotrienes, or the development of models for the chronic aspects of asthma. The appointment will be for one to two years, and will offer the opportunity to gain firsthand industrial research experience.

The successful candidate will have a PhD or MD degree with research experience in physiology, pharmacology, or a related discipline and should have an interest in the etiology of asthma.

Kalamazoo is a mid-sized Southwestern Michigan community offering immediate access to an excellent mix of cultural/recreational opportunities including lakes, nearby colleges, and a four-season climate. Salary and benefits programs will be comparable to those for regular employees.

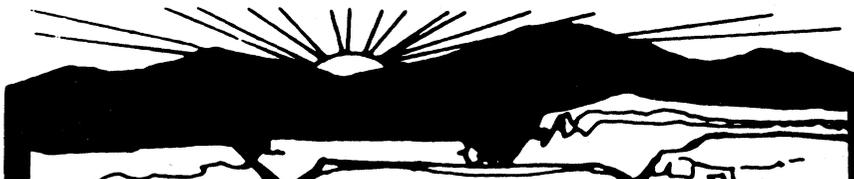
Please send resume in confidence to:

William J. Hall 12573

**Upjohn**

The Upjohn  
Company  
7000 Portage Road  
Kalamazoo, MI 49001

An Equal Opportunity Employer M/F



## Career Opportunity In Tumor Biology

### LOS ALAMOS SCIENTIFIC LABORATORY

We are seeking a Principal Investigator for a new program entitled "Analysis of Interactions During Tumorigenesis." The program concerns the development of methods for the analysis of the carcinogenicity of complex mixtures within the context of separable phenomena such as initiation, promotion, antipromotion, progression, regression, etc.

The incumbent will be expected to contribute to the design of carcinogenicity testing procedures as well as provide fundamental knowledge on the tumorigenesis process using both *in vitro* systems and cell culture models.

Position requires a background of productive research in the areas of tumor biology and *in vitro* transformation, including a demonstrable record of successful oral and written reporting. Experience with program development and critical program assessment is desirable. Doctoral level education is required with recognized qualifications in experimental pathology and mammalian cell biology desirable.

Send resume, in complete confidence, to:

James Trout, DIV 80-BM  
Los Alamos Scientific Laboratory  
Box 1663  
Los Alamos, New Mexico 87545

An Affirmative Action/Equal Opportunity Employer: Women, Minorities, the Handicapped, and Veterans are Urged to Apply. U.S. Citizenship Required.

**LOS ALAMOS SCIENTIFIC LABORATORY**

University of California



The National Oceanic and Atmospheric Administration, U.S. Department of Commerce, is seeking applicants for the position of:

### DIRECTOR, ENVIRONMENTAL RESEARCH LABORATORIES

The Director manages a staff of 1300, located in Boulder, Colorado, and other cities, for the purpose of planning, developing, implementing, and evaluating research programs to describe, understand, and improve the prediction of oceanic processes and phenomena, ocean-atmosphere interactions, and the environmental processes of coastal areas; conduct research on the physics and chemistry of the atmosphere; conduct research on the dynamics and physics of geophysical fluids systems to describe, understand, and improve predictions of the state of atmosphere and oceans, and their processes; develop techniques and maintain facilities to support the conduct of research and monitoring activities; measure and monitor the atmospheric composition for use in predicting and validating trends in atmospheric conditions; and conduct research to describe, understand, and improve prediction of environmental processes in the Great Lakes and their watershed. Represents the organization in groups both in and out of government.

**QUALIFICATIONS:** demonstrated technical knowledge and established reputation in research fields sufficient to analyze the course, nature, and/or effects of such programs; experience in setting research and development policy and in representing R & D activities before a variety of special interest groups; evidence of ability to perform personal research and publish findings; evidence of in-depth managerial or executive performance reflecting success in controlling the full range of administrative operations of a major technically oriented, personnel intensive organization.

**COMPENSATION:** career appointment to a senior executive service position at \$47,889 to \$50,112, commensurate with experience and scientific achievement; eligibility for 20 percent performance-related bonuses; complete civil service benefit package.

**APPLICATION:** application materials, including duty, and qualification and evaluation method statements, will be mailed to interested persons upon telephone request to: R. Williams, 301-443-8425. Office of Personnel (MP/PER11), National Oceanic and Atmospheric Administration, 6001 Executive Boulevard, Rockville, Maryland 20852. Vacancy closes 28 November 1980.

*The Department of Commerce is an Equal Opportunity Employer.*

## POSTDOCTORAL RESEARCH FELLOWSHIP PARIS, FRANCE

A postdoctoral research fellow is required for structural investigations of the molecular interaction of lipoproteins, apolipoproteins and their constitutive peptide fragments with high-affinity lipoprotein receptors on mammalian plasma membranes.

A sound background in protein chemistry or cell biology, or both, is desirable, and an interest in macromolecular structure essential. The successful applicant will join an active, well-equipped research unit within the National Institute for Medical Research; the laboratories are situated 20 minutes southeast of Paris. The position is available immediately, and will be tenable for 2 years. Initial salary negotiable and subject to relevant experience.

Applications, including curriculum vitae, a full statement of research interests and experience, and the names of two referees, should be sent to:

Dr. M. John Chapman  
"La Closerie"  
Bâtiment B  
1 à 11, rue Elias Howes  
94100—SAINT-MAUR-les-FOSSES  
FRANCE

## POSITIONS OPEN

**POSTDOCTORAL POSITION** in hormonal regulation of cyclic nucleotide-independent protein kinases (experience in monoclonal antibody production preferred but not required) or in regulation of protein synthesis by phosphorylation. This position is sponsored by an NIH Endocrinology Training Grant. Send curriculum vitae and three letters of reference to: **Dr. Jolinda A. Traugh, Department of Biochemistry, University of California, Riverside, Calif. 92521. Equal Opportunity through Affirmative Action.**

A **POSTDOCTORAL POSITION** with an academic appointment at the instructor level is immediately available to study the effect of fat type and level on spontaneous and chemically induced tumors. Send curriculum vitae and three references to:

**Dr. Shukri M. El-Khatib**  
Chairman, Biochemistry Department  
Universidad Central del Caribe Medical School  
P.O. Box 935  
Cayey, Puerto Rico 00633

### POSTDOCTORAL RESEARCH ASSOCIATE

Immediate opening for individual with training in virology or cell biology to study hepatitis B virus gene expression in eukaryotic cells. Applicants with experience in fluorescence microscopy autoradiographic techniques and/or *in vitro* transcription-translation are welcome. Please submit curriculum vitae and letters of recommendation to: **Dr. A. R. Neurath, The Lindesley F. Kimball Research Institute of NEW YORK BLOOD CENTER, 310 East 67 Street, New York, N.Y. 10021. An Equal Opportunity Employer.**

### TRUDEAU INSTITUTE, INC.

A **POSTDOCTORAL RESEARCH POSITION IN MICROBIOLOGY** is available immediately to study the cellular mechanisms involved in the expression of acquired antimicrobial immunity and the role of suppressor cells in the modulation of this response. A Ph.D. in microbiology or immunology is required. Salary is \$13,500 per annum plus fringe benefits and on-campus housing is available. Send résumé and names of references to: **Dr. Frank M. Collins, Trudeau Institute, Inc., Box 59, Saranac Lake, N.Y. 12983.**

**POSTDOCTORAL RESEARCH POSITION** available January 1981 in animal cardiovascular psychophysiology involving psychological stress and behavioral, adrenergic, and cardiovascular parameters. Experience in physiological measurement required; knowledge of cardiovascular physiology and neurochemistry preferred. Send curriculum vitae and names of three references to: **Richard Friedman, Ph.D., Long Island Research Institute, Health Sciences Center, T10, State University of New York, Stony Brook, N.Y. 11794. An Equal Opportunity Employer.**

### POSTDOCTORAL TRAINING IN LIPID MEMBRANE RESEARCH

Postdoctoral positions are available at The Hormel Institute under a training grant in atherosclerosis from the National Heart, Lung, and Blood Institute. Training and research projects are available in several areas relevant to the biological, biochemical, and physicochemical aspects of **heart disease** and the **atherosclerotic process**. Participating faculty members are Doctors W. J. Baumann, H. L. Brockman, R. T. Holman, H. M. Jenkin, D. R. Pfeiffer, O. S. Privett, H. Schlenk, and H. H. O. Schmid. The program also offers a lecture and seminar series and the possibility for collaborative research.

The annual appointments are renewable for 1 to 3 years and currently provide a minimum stipend of \$14,860. Applicants must be citizens, noncitizen nationals, or permanent residents of the United States and must have earned a Ph.D. or M.D. degree. Application should include curriculum vitae, list of publications, and the names and addresses of three references. Preferred faculty member and research area may be indicated initially or after the applicant has requested and examined the description of research projects. To apply or obtain more information, write: **Dr. R. T. Holman, Professor and Director, The Hormel Institute, University of Minnesota, 801 16th Avenue, NE, Austin, Minn. 55912. The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.**

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH POSITION** in mammalian spinal cord injury or disease. Preference given to Ph.D. or equivalent with experience in neurophysiological techniques and/or electron microscopy. Excellent fringe benefits and salary commensurate with experience. Send curriculum vitae and three letters of reference to: **Dr. Harry G. Goshgarian, Department of Anatomy, Wayne State University School of Medicine, 540 East Canfield Avenue, Detroit, Michigan 48201. An Equal Opportunity/Affirmative Action Employer.**

### CHARLES KENNETH FELDMAN PROFESSOR OF OPHTHALMOLOGY

The Department of Ophthalmology and the Jules Stein Eye Institute, University of California, Los Angeles (UCLA) School of Medicine, are seeking applicants for the recently established Charles Kenneth Feldman Professorship of Ophthalmology. Individuals dedicated to a career in vision research and teaching are encouraged to apply. The search committee favors candidates with an interest and background in clinical visual physiology and special interest in the investigation of retinal degeneration. Applications should be submitted with curriculum vitae, bibliography, and a letter discussing career goals to:

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

All applications and inquiries will be treated in strict confidence. *Candidates are encouraged to apply regardless of sex or ethnic origin. UCLA is an Equal Opportunity/Affirmative Action Employer.*

Tenure-track position at the level of **FULL PROFESSOR** starting 1 July 1981. A candidate with a D.O., M.D., and/or Ph.D. with strong research in cell biology or neurobiology and teaching in gross anatomy. Salary begins at \$33,000. Please send curriculum vitae to: **Dr. Bruce Walker, Department of Anatomy, Michigan State University, East Lansing, Mich. 48824.**

*Michigan State University is an Affirmative Action/Equal Opportunity Institution.*

### RESEARCH ASSISTANT GAS CHROMATOGRAPHY/ MASS SPECTROMETRY

Immediate opening for research assistant to operate Finnigan 1015 and 4000 GC/MS with Inco computer for drug and toxin screen laboratory. Background in organic chemistry a plus. Will report to Dr. Lawrence B. Hendry. Telephone or write today:

**Mary G. Hagan**  
Medical College of Georgia  
Employment Section  
Augusta, Georgia 30912  
Telephone: 404-828-3081

*Equal Opportunity Employer, M/F*

**MARINE SCIENCES RESEARCH CENTER** seeks a **RESEARCH ASSOCIATE**. Position available on or about 1 November 1980 for a research associate in seaweed culture: design and construction of seaweed rafts and conducting field growth experiments in nearshore waters on attached and floating species. Applicants should have field and diving experience and should hold a Ph.D. Possibility of 2- to 3-year position, depending upon funding. Salary range: \$16,000 to \$18,500. We also have a **POSTDOCTORAL POSITION** available, on or about 1 November 1980, for postdoctoral research in seaweed productivity: interactions between light, temperature, and nitrogen and effects on growth in dense culture. Knowledge of carbon-14 and nitrogen-15 techniques desirable. Salary range: \$15,000 to \$17,000, depending upon qualifications. Possibility of 2-year position, depending upon funding. Send résumé and three letters of reference by 8 November 1980 to: **Dr. Boudewijn H. Brunkhuis, Marine Sciences Research Center, State University of New York at Stony Brook, Long Island, N.Y. 11794. An Equal Opportunity/Affirmative Action Employer.**

**RESEARCH POSITION** available to study cellular immunology of human tumors. Candidate must be M.S. or recent Ph.D. with experience in cell culture and immunological techniques. Excellent salary and benefits. Please send résumé to: **G. Parker, Immunochimistry Research, Evanston Hospital, 2650 Ridge Avenue, Evanston, Illinois 60201. Equal Opportunity Employer, M/F.**

## POSITIONS OPEN

**RESEARCH ASSOCIATE** positions at the Medical College of Ohio are available at the postdoctoral level in the field of hypertension research. Applicants should have either a Ph.D. in any basic biological science (biochemistry, physiology, pharmacology, pathology, genetics, and so forth) or an M.D. or D.V.M. degree with a strong interest in basic or clinical research. Active areas of research include renin-angiotensin-aldosterone system, prostaglandins, cardiovascular pathology, membrane transport, smooth muscle physiology, kallikrein-kinin system, and catecholamine metabolism. Appointments are for 1 year and are renewable for up to two additional years. Fellowships are supported by the NIH and pay \$13,380 the first year. Open only to U.S. citizens or persons with a permanent visa. Interested persons should send curriculum vitae to: **Dr. John Rapp, Department of Medicine, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699. An Equal Opportunity Employer, M/F.**

**RESEARCH SCIENTIST** to assume responsibility for overall operation of large counting facility for radionuclide measurements; to conduct active research in the radiological health and environmental field (atmosphere, lithosphere, hydrosphere) and/or laser ir-spectroscopy. Qualifications: Ph.D. in the physical, chemical, or earth sciences, with experience in nuclear instrumentation. Submit résumés to: **Felix H. Heilpern, Division of Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, N.Y. 12201.**

**TERATOLOGIST**—Tenure-track position at assistant or associate level. Candidates must have Ph.D. and/or D.V.M.; the experience necessary to establish a teratologic laboratory and assist in teaching veterinary anatomy. Position available 15 January 1981. Application deadline: 17 November 1980. Send curriculum vitae, current publications, and three references to: **Dr. William Huber, Chairman, VCAPP Department, McCoy South 101, College of Veterinary Medicine, Washington State University, Pullman, Wash. 99164. Washington State University is an Affirmative Action Employer with an Affirmative Action policy.**

**ZOOLOGIST**, tenure-track, rank and salary according to experience. Applicants should hold doctorate and be competent to teach embryology, invertebrate zoology, and general biology. A genuine commitment to teaching is necessary. The university encourages and supports faculty research. Send curriculum vitae, transcripts, and recommendations to: **Charles Foreman, Chairman, Biology Department, The University of the South, Seawee, Tennessee 37375. An Equal Opportunity/Voluntary Affirmative Action Employer.**

## WORKSHOP

### International Workshop on Herpesviruses 27 to 31 July 1981—Bologna, Italy

This workshop will cover topics related to herpesvirus genome structure, function and replication, cell transformation, latency, immunology, and chemotherapy. Individuals interested in participating in the workshop should write to: **Dr. Fred Rapp, Department of Microbiology, The Pennsylvania State University, Hershey, Pa. 17033. Telephone: 717-534-8253.**

## COURSE

### MOLECULAR ENDOCRINOLOGY AND TECHNIQUES FOR HORMONE ACTION 1 March to 6 March 1981

Course will consist of lectures in methodology, with comprehensive syllabus covering receptors, gene transcription, mRNA and protein synthesis, recombinant DNA, protein hormones, and cyclic nucleotides. Optional DNA sequencing laboratory course for additional fee.

Codirectors: W. T. Schrader and B. W. O'Malley. Fee: \$195/\$145 (fellows). For further information, contact: **Barbara Gordin, Department of Cell Biology, BAYLOR COLLEGE OF MEDICINE, Houston, Texas 77030.**

Deadline: 1 January 1981.

*Baylor College of Medicine is an Equal Opportunity/Affirmative Action Employer.*

# TOXICOLOGIST

The Chemistry and Life Sciences Group of the Research Triangle Institute has a permanent staff opening for a toxicologist. A minimum of 2 years of postdoctoral experience in toxicology is required. Research areas of interest which the Institute wishes to have developed are: (1) general toxicology, (2) *in vivo* and *in vitro* carcinogenesis, and (3) inhalation toxicology. Training and/or experience in pharmacology and pharmacokinetics would be desirable.

Applications should include curriculum vitae and at least three professional references.

Send applications to: *Dr. Jerry R. Reel, Director, Life Sciences and Toxicology Division, Research Triangle Institute, P. O. Box 12194, Research Triangle Park, N.C. 27709.*

# RTI

Research Triangle Institute

An Equal Opportunity/Affirmative Action Employer

## STOCKTON STATE COLLEGE

### Dean of Natural Sciences and Mathematics

Applications and nominations are invited for the position of Dean of the Faculty of Natural Sciences and Mathematics. The appointment commences July 1, 1981. Base salary will be about \$34,500.

**Responsibilities:** The Dean organizes and administers the Faculty of Natural Sciences and Mathematics, which consists of a 50-member faculty organized around degree programs in biology, chemistry, environmental studies, geology, marine science, mathematics and physics.

**Requirements:** The candidate should have an earned doctorate in an appropriate discipline, a record of scholarly accomplishment, and a genuine commitment to liberal education. Breadth of educational background and experience in working within a state system is highly desirable. The candidate must have the experience and leadership capacity necessary to function as a forceful advocate for the Faculty. Women and minority candidates are actively sought.

Stockton State College is part of the New Jersey state system of higher education and is located in southern New Jersey, 12 miles northwest of Atlantic City, on a wooded 1600-acre campus in the Pine Barrens. The College enrolls approximately 4000 (FTE) students and offers baccalaureate degrees in 23 programs in four divisions. Distinctive features include an interdisciplinary academic structure, a faculty of highly credentialed generalists committed to undergraduate teaching, and a novel approach to general education. One of the most recent public four-year colleges built in the United States, Stockton opened in 1971 and has 172 full-time faculty members of whom an average of 38% are tenured.

**Applications and Nominations:** Screening will begin on December 1, 1980. Send applications and nominations to:

Dr. Philip Nanzetta  
Vice President for Academic Affairs  
Stockton State College  
Pomona, New Jersey 08240



AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

## CELL BIOLOGIST/ IMMUNOLOGIST

Pfizer Central Research is seeking a Cell Biologist/Immunologist to join a multidisciplinary team of researchers currently engaged in the development of new drug therapies for alterations in host defense mechanisms. Exploitation of novel biological mechanisms and the publication of important findings will be encouraged.

Applicants should hold a Ph.D. in Cell Biology, Immunology or other allied biomedical areas and be able to demonstrate a successful record of publication. Previous experience is sought particularly in the areas of *in vitro* and *in vivo* macrophage/lymphocyte function and the use of animal pathogen models.

In addition to excellent potential for professional recognition and career growth, we offer a competitive salary/benefits package and the opportunity to live in an attractive shore community, midway between New York and Boston. Apply by sending your resume and brief description of research interest to: **Mr. F. G. Ziegler, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.**



An Equal  
Opportunity Employer

## INDUSTRY CAREERS

EXCELLENT SALARIES AND BENEFITS • MAJOR PHARMACEUTICAL COMPANY NY-NJ METROPOLITAN AREA EXPANDING—EXPANDING—EXPANDING.  
**MUST HAVE PRIOR INDUSTRY EXPERIENCE.**

DVM PATHOLOGIST .....	to 40K
PARAPATHOLOGIST .....	to 35K
BS OR MS TOXICOLOGIST .....	to 28K
PHD TOXICOLOGIST .....	to 39K
PHD ANALYTICAL CHEMIST WITH COMPUTER EXPERIENCE .....	to 38K
BS OR MS ANALYTICAL CHEMIST, HPLC, CENTRIFUGES .....	to 30K
PROJECT CONTROL ANALYST, SYSTEMS & PROGRAMMING, COST OUT PROJECTS, BS .....	to 32K
PROJECT COORDINATOR, KNOW PROTOCOLS & GLP, & COMPUTER COORDINATE SOP'S, BS .....	to 30K
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## SYMPOSIUM

### TRACE METALS IN SEAWATER

An International Symposium in the form of a NATO Advanced Research Institute will be held at "Ettore Majorana" Centre for Scientific Culture, Erice, Sicily, Italy, from 30 March to 3 April 1981.

Topics will include accurate measurements in seawater, international intercomparisons, oceanic distributions, oceanic modelings, chemical speciations, biota interactions, oceanic processes, and future approaches. Main emphasis will be in oceanic theme. Chairman or rapporteurs include D. Dyrsen, J. D. Burton, D. Kester, F. Millero, P. G. Brewers, C. S. Wong, E. Boyle, K. W. Bruland, E. D. Goldberg, J. Martin, F. M. Morel, and M. J. Bowers.

Further information and applications for contribution to the above international symposium should be addressed to: **Dr. C. S. Wong, Chairman of Organizing Committee, NATO-ARI on Trace Metal in Seawater, c/o Ocean Chemistry Division, Institute of Ocean Sciences, P.O. Box 6000, Sidney, British Columbia, Canada V8L 4B2, preferably before 15 November 1980. Telex: 049-7281. Telephone: 604-656-8407.**

## PROGRAMS

**HYPERTENSION RESEARCH TRAINING PROGRAM** funded by NHLBI. Post- and predoctoral research traineeships available July 1981 for 1 or 2 years in the following areas: salt-dependent hypertension, membrane sodium transport, neural mechanisms, nephron function, cardiac hypertrophy, membrane ion channels, vascular wall molecular pathology, vascular connective tissue, exercise training in borderline hypertensives, renin-angiotensin-aldosterone and hemodynamics. Must be U.S. citizen or hold immigrant's visa. Send curriculum vitae and three letters of recommendation to: **Harriet P. Dustan, M.D., Director, Cardiovascular Research and Training Center, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294. An Affirmative Action/Equal Opportunity Employer.**

**LUNG PHARMACOLOGY AND PATHOPHYSIOLOGY TRAINING PROGRAM.** Funded by NHLBI. Postdoctoral traineeships available July 1980 for 1 or 2 years. Applicants must be U.S. citizens or permanent residents. Areas of research training include pharmacology of airway and pulmonary vascular muscle, pathophysiology and immunology of airway, nonrespiratory functions of lung, biochemical pharmacology of lung, mediators of lung response to injury. Correspondence to: **C. N. Gillis, Ph.D., Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut 06510. Yale University is an Affirmative Action/Equal Opportunity Employer.**

## TRAINEESHIPS

**Postdoctoral Traineeships in Neuroplasticity.** Positions are available for training in research related to the development and regeneration of the nervous system. The traineeships, supported by an NINCDS training grant, are available to individuals with the Ph.D. or M.D. degree beginning 1 July 1981. The multidisciplinary program has available preceptors Doctors N. Berman, T. Cunningham, M. Goldberger, H. Murphy, M. Murray, L. Pubols, L. Ross, and B. Weiss. Applications consisting of a statement of research interests, curriculum vitae, and three references, should be sent to: **Dr. Leonard L. Ross, Department of Anatomy, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129. An Equal Opportunity/Affirmative Action Employer.**

## FELLOWSHIPS

**PREDOCTORAL/POSTDOCTORAL FELLOWSHIPS** in anthropology, biology, and earth sciences. Tenable at Smithsonian's museum, laboratory, field, and research facilities for 6 to 12 months. Deadline: 15 January 1981. Contact: **Office of Fellowships and Grants, Desk S, Smithsonian Institution, L'Enfant Plaza 3300, Washington, D.C. 20560. Awards are based upon merit, without regard to race, color, sex, religion, national origin, or age of any applicant.**

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIPS

Radiation oncology, medical radiation dosimetry, and radiobiology available 1 July 1981 at Radiation Oncology Center, University of Kentucky Medical Center. Supported by NIH training grant for qualified M.D. or Ph.D. applicants. Must be U.S. citizens or permanent residents. Candidates must be interested in research and academic career. Submit curriculum vitae, bibliography, and names of three references to: **Chairman, Radiation Oncology Center, University of Kentucky Medical Center, Lexington, Kentucky 40536. An Equal Opportunity Employer.**

**POSTDOCTORAL FELLOWSHIP:** 2-year position to start between January and June 1981. Studies of insulin receptor structure and insulin action. Write: **James N. Livingston, D.V.M., Ph.D., Department of Medicine, Endocrine-Metabolism Unit, University of Rochester School of Medicine, Rochester, New York 14642. An Equal Opportunity Employer.**

Fill a staff position on Capitol Hill. Two American Chemical Society **CONGRESSIONAL FELLOWSHIPS** to begin fall 1981. For further information, write: **Amanda B. Huston, American Chemical Society, 1155 16th Street, NW, Washington, D.C. 20036. Telephone: 202-872-4384.**

**POSTDOCTORAL FELLOWSHIPS** are available in the Neurobehavioral Sciences Research Training Program of Columbia University. Interdisciplinary training is available in neurochemistry, neuroanatomy, physiological psychology, neuroendocrinology, developmental neurobiology, vertebrate and invertebrate neurophysiology, and related disciplines. Stipends set by NIH are \$13,380 to \$17,040, depending on experience. Eligibility is limited by NIH regulations to U.S. citizens or aliens with permanent status and to applicants who will have received their M.D. or Ph.D. prior to 30 June 1981. For further information and a description of research opportunities in participating laboratories, write to: **Dr. Murray Glusman, Director, Neurobehavioral Sciences Research Training Program, Department of Psychiatry, Columbia University, 722 West 168 Street, New York, N.Y. 10032.**

**POSTDOCTORAL FELLOWSHIP** to study enzyme mechanisms and to develop mechanism-based inhibitors. A 2- or 3-year position beginning between 1 January and 1 September 1981 is available at the NIH-specified pay scale. A pyrimidine biosynthetic enzyme will be studied by steady-state kinetics, proton and cadmium NMR, MCD, and chemical modification. Send description of research experience and two letters of recommendation to: **Dr. Kim D. Collins, Department of Biochemistry, Johns Hopkins University, 615 North Wolfe Street, Baltimore, Md. 21205.**

**POSTDOCTORAL FELLOWSHIPS.** Recent Ph.D. for research in tumor cell biology, immunology, biochemical mechanisms, differentiation, or somatic cell genetics. Available immediately or later. Send curriculum vitae, graduate transcript, and three references to: **Dr. S. Silagi, Cornell University Medical College, 515 East 71 Street, New York, N.Y. 10021. Equal Opportunity/Affirmative Action Employer.**

### M.Sc. and/or Ph.D. Graduate Studentship's Postdoctoral Fellowship

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Studentship available to Canadian citizens or landed immigrants is funded by MRC of Canada. Applications to:

**Dr. Ian R. Senciall  
Room 5313  
Medical School  
Health Sciences Center  
Memorial University of Newfoundland  
St. John's, Newfoundland, Canada A1B 3V6**

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP IN IMMUNOLOGY RESEARCH.** Research into mechanism of allergic (type I) mediator release. In addition, fellow may participate in multidisciplinary research program. Background in immunology or membrane biochemistry desirable. Curriculum vitae to: **Dr. D. Conrad, Box 678—MCV Station, Richmond, Va. 23298. Only U.S. citizens or foreign nationals with permanent residence visas. Equal Opportunity/Affirmative Action Employer.**

### FELLOWSHIP IN HEMATOPATHOLOGY

Postresidency training and research in laboratory hematology including associated areas of coagulation, lymph nodes, and immunology for Board-eligible pathologists. One-year program with option for second year. A University of California Irvine Medical Center and Memorial Hospital Medical Center of Long Beach integrated program. Positions available starting July 1981. Apply with curriculum vitae to: **Henry Simpkins, M.D., Division of Hematopathology, University of California Irvine Medical Center, Orange, Calif. 92668. An Equal Opportunity/Affirmative Action Employer.**

### GRADUATE TRAINING IN ANATOMY FELLOWSHIPS AVAILABLE

The Department of Anatomy at East Carolina University School of Medicine is seeking qualified candidates for Ph.D. training in anatomy. Graduate fellowships (\$5700 for 12 months) and partial tuition waivers are available for qualified applicants. Only applicants interested in an academic career which involves a heavy emphasis on research into the interrelationship between structure, biochemical, and physiological function as it relates to reproduction or diabetes need apply. Inquiries should be directed to: **Dr. T. M. Louis, Director of Graduate Studies, Department of Anatomy, East Carolina University School of Medicine, Greenville, N.C. 27834. Telephone: 919-757-6225. An Equal Opportunity/Affirmative Action Employer.**

## MARKETPLACE

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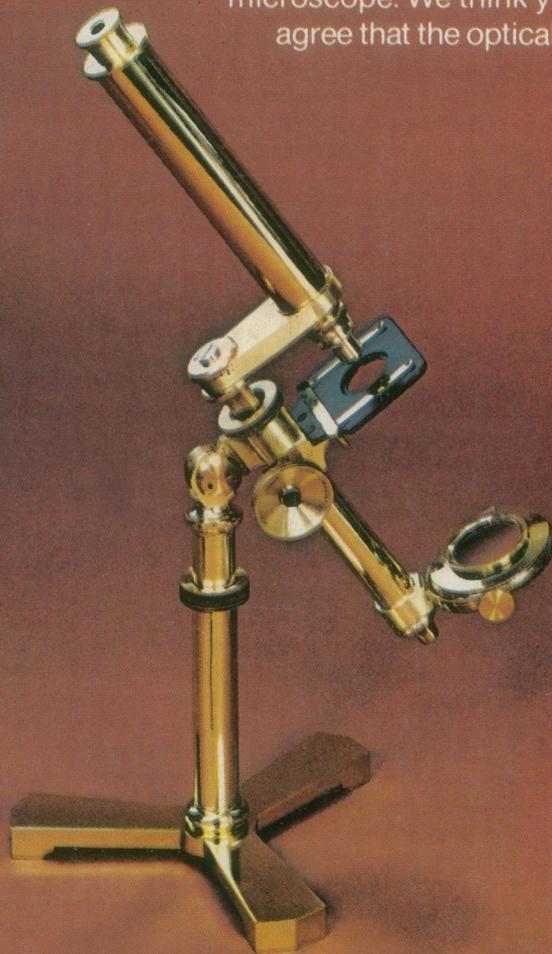
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