

tions for future research as well as incisive criticisms of conventional wisdom and interpretations of past experiments. Most effectively, Papaj and Rausher point out that many misunderstandings about herbivore host selection occur because researchers overemphasize the behavior that occurs after an insect has discovered its host plant and downplay the behavior that leads to host plant discovery.

Overall, this volume should be an especially useful reference to ecologists and evolutionary biologists lacking knowledge of insect behavior and sensory physiology but nonetheless pursuing research in insect ecology. Its primary merit is that it addresses a neglected topic and, in some selections, focuses attention on new ways of thinking or new avenues for research. Because a substantial number of the contributions in this volume are shallow or pedantic, there remains a large gap in the literature concerning host-seeking processes in herbivorous insects. At least this book ably points out why that gap needs to be filled before we can understand plant-insect dynamics.

PETER KAREIVA

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The Parity Story

Selected Papers, 1945-1980, with Commentary. CHEN NING YANG. Freeman, New York, 1983. xiv, 596 pp., illus. Cloth, \$39.95; paper, \$19.95.

In 1957, Chen Ning Yang and Tsung Dao Lee were awarded the Nobel Prize in Physics for proposing the law of parity nonconservation in weak interactions, that is, the violation of right-left symmetry among the elementary particles. Their work was done in the United States, but they were nonetheless the first Chinese scientists to be so honored. Now Yang has taken the occasion of his 60th birthday to provide, in place of festschrift, his own selection from his first 35 years of scientific writings (74 items out of about 200), together with some 80 pages of his own commentaries and a dozen pages of photographs. The book is a pleasure to read from start to finish, thanks to Yang's taste, style, and aesthetic sensitivity, coupled with his warmth and common touch. Few will want to read it in sequence, however; instead, one is drawn back and forth among the "commentaries" (which in-

clude biographical and historical notes, opinions, and personal encounters), the beguiling photographs (family portraits from China, scenes at the Institute for Advanced Study, and so on), and the scientific papers, many of them familiar, but still stunning classics of theoretical physics.

Aside from the great works with Lee (and one with Reinhard Oehme) on symmetry violations in the weak interactions, there are many papers throughout Yang's career that are based on symmetry notions and are so "geometrical" that one immediately grasps both the truth and the beauty of the argument, such as the 1950 work on "dematerialization into two photons." The most important of these papers is probably the famous work with Robert L. Mills, which is the model for the non-Abelian gauge theories that currently dominate theoretical physics. That recalls also Yang's work with his teacher, Enrico Fermi, called "Are Mesons Elementary Particles?," which is the forerunner of the Sakata model and thus of the quark model of elementary particles. Both the Fermi-Yang and the Yang-Mills papers were considered little more than curiosities in their day.

In his commentaries, Yang also pays his debts to his parents, to his teachers, to his co-workers, and to his native land, as well as to his scientific homeland, the United States. His taste and style in physics, he says, were formed from 1938 to 1944, when he was a student in Kunming. His undergraduate thesis was on group theory and molecular spectra, and group theoretical ideas (the mathematical expression of symmetry) have ruled his subsequent career. His master's thesis in Kunming dealt with statistical mechanics, the other major part of his work. Since 1971 Yang's voice has been influential in China, urging that increased attention be paid to basic research, a policy apparently approved by Chou En-lai and Mao but frustrated by the "gang of four" until 1977.

There are many other good things in this volume, but not space enough here to deal with them. The "parity" story will be read with great attention by all who experienced that dramatic turning point in physics. While regretting the sad controversy it engendered, they will welcome yet another personal view. Yang's decision to make his own festschrift was a risky one, but it could not have succeeded better.

Laurie M. Brown

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Books Received

Atlas of Marine Use in the North Pacific Region. Edward Miles and five others. University of California Press, Berkeley, 1983. vi, 104 pp. \$125.

Atomistics of Fracture. Proceedings of an institute, Calcatoggio, Corsica, France, May 1981. R. M. Latanision and J. R. Pickens, Eds. Plenum, New York, 1983. xvi, 1074 pp., illus. \$115. NATO Conference Series VI, vol. 5.

The Auditory Psychobiology of the Mouse. James F. Willott, Ed. Thomas, Springfield, Ill., 1983. x, 508 pp., illus. \$56.50.

Automatic Control in Space 1982. Proceedings of a symposium, Noordwijkerhout, Netherlands, July 1982. P. Th. L. M. van Woerkom, Ed. Published for the International Federation of Automatic Control by Pergamon, New York, 1983. x, 592 pp., illus. \$145.

Automation Impacts on Industry. Robert P. Ouellette, Lydia W. Thomas, Edward C. Mangold, and Paul N. Cheremisinoff. Ann Arbor Science (Butterworths), Woburn, Mass., 1983. xviii, 186 pp., illus. \$27.50.

Avoiding Liability in Architecture, Design and Construction. An Authoritative and Practical Guide for Design Professionals. Robert F. Cushman, Ed. Wiley-Interscience, New York, 1983. xxvi, 416 pp., illus. \$45.

Biology. A Human Approach. Irwin W. Sherman and Vilia G. Sherman. Oxford University Press, New York, ed. 3, 1983. xiv, 682 pp., illus. \$25.95.

Child Advocacy. Psychological Issues and Interventions. Gary B. Melton. Plenum, New York, 1983. xiv, 228 pp. \$22.50.

Depositional Systems. A Genetic Approach to Sedimentary Geology. Richard A. Davis, Jr. Prentice-Hall, Englewood Cliffs, N.J., 1983. xviii, 670 pp., illus. \$33.95.

Descartes' Medical Philosophy. The Organic Solution to the Mind-Body Problem. Richard B. Carter. Johns Hopkins University Press, Baltimore, 1983. xiv, 302 pp. \$25.

Energy Efficient Electric Motors and Their Application. Howard E. Jordan. Van Nostrand Reinhold, New York, 1983. xii, 168 pp., illus. \$24.50.

Energy Terminology. A Multi-Lingual Glossary. Pergamon, New York, ed. 2, 1983. xii, 270 pp. Cloth, \$100; paper, \$40.

Energy for Developed and Developing Countries. Papers from a forum, Nice, France, Oct. 1979. Behram N. Kursunoglu, Jean Couture, Andrew C. Millunzi, Arnold Perlmutter, and Linda Scott, Eds. Lexington (Heath), Lexington, Mass., 1983. xxii, 194 pp., illus. \$28.95.

Energy from Forest Biomass. Papers from a congress, Kyoto, Japan, Sept. 1981. W. Ramsay Smith, Ed. Academic Press, New York, 1982. xiv, 280 pp., illus. \$27.50.

Gems. Their Sources, Descriptions and Identification. Robert Webster. Revised by B. W. Anderson. Butterworths, Boston, ed. 4, 1983. xxii, 1006 pp., illus. \$79.95.

Genes. Benjamin Lewin. Wiley, New York, 1983. xvi, 716 pp., illus. \$33.95.

Genetic Engineering 4. Robert Williamson, Ed. Academic Press, New York, 1983. xii, 186 pp., illus. Paper, \$22.

Genetic Engineering Techniques. Recent Developments. Proceedings of a symposium, Taipei, Taiwan, Jan. 1982. P. C. Huang, T. T. Kuo, and Ray Wu, Eds. Academic Press, New York, 1983. xiv, 360 pp., illus. \$28.50.

Holographic and Speckle Interferometry. A Discussion of the Theory, Practice and Application of the Techniques. Robert Jones and Catherine Wykes. Cambridge University Press, New York, 1983. xii, 330 pp., illus. \$54.50.

International Competition in Advanced Technology. Decisions for America. National Academy Press, Washington, D.C., 1983. x, 70 pp. Paper, \$9.50.

Introduction to Marine Engineering. D. A. Taylor. Butterworths, Boston, 1983. viii, 360 pp., illus. \$29.95.

Introduction to Palaeobiology: General Palaeontology. B. Ziegler. Translated from the German edition (Stuttgart, 1980). R. O. Muir, Transl. Ed. Horwood, Chichester, England, and Halsted (Wiley), New York, 1983. 226 pp., illus. \$69.96. Ellis Horwood Series in Geology.

Microbiological Standardisation of Laboratory Animals. Papers from a symposium, Dec. 1981. F. J. C. Roe and A. A. Deeny, Eds. Published for Bantin and Kingman by Horwood, Chichester, England, 1983 (U.S. distributor, Halsted [Wiley], New York). 116 pp., illus. \$39.95.

Microbiology: A Laboratory Manual. James G. Cappuccino and Natalie Sherman. Addison-Wesley, Reading, Mass., 1983. xiv, 466 pp., illus. Paper, \$16.95.

The Molecular Biology of Enzyme Synthesis. Regu-

(Continued on page 84)

Notice to Contributors

Efforts at *Science* to reduce a backlog of accepted reports in order to attain faster publication* have been successful. The acceptance rate for reports, which was reduced to about 10 percent over the summer, is now being increased. We are now able to publish reports within 2 months after acceptance on average.

*See notice in *Science*, 15 July, p. 259.

Reports

Heat Transfer Measurements of the 1983 Kilauea Lava Flow

Abstract. *Convective heat flow measurements of a basaltic lava flow were made during the 1983 eruption of Kilauea volcano in Hawaii. Eight field measurements of induced natural convection were made, giving heat flux values that ranged from 1.78 to 8.09 kilowatts per square meter at lava temperatures of 1088 and 1128 degrees Celsius, respectively. These field measurements of convective heat flux at subliquidus temperatures agree with previous laboratory measurements in furnace-melted samples of molten lava, and are useful for predicting heat transfer in magma bodies and for estimating heat extraction rates for magma energy.*

The 1983 eruption of Kilauea volcano in Hawaii occurred along the volcano's east rift zone. This eruption began on 2 January 1983, and over a period of 2 weeks there were a number of eruptive episodes producing several lava flows. Additional lava flows occurred during eruptions in February. The active lava flows offered an opportunity to run field verification measurements of induced convective heat flow in basaltic lava. Convective heat flow in lava and magma has been studied (1, 2) because of its importance to energy extraction from molten magma (3-5) and because of its relation to tectonic processes (6).

Many laboratory measurements of convective heat transfer in basaltic melts have been made at temperatures ranging from superliquidus down to near the solidus (1, 2). These measurements were performed on furnace-melted samples of lava. The lava remelts were thoroughly degassed in the remelting process. Volatile components that are present in magma at depth lower the viscosity of the magma and improve convection heat transfer (7). Freshly erupted lava that still retains some volatile components should exhibit this same effect. Before the 1983 Kilauea eruption there was only one field measurement of convective

heat transfer in freshly erupted basalt. This measurement was made in the 1977 Kilauea eruption, and it indicated a steady convective heat flux of 5 to 10 kW/m² in a region of combined natural and forced convective flow (8).

The convective heat flow measurements were made with a transient convection probe. This probe consists of a titanium-zirconium-molybdenum (TZM) rod with an internal thermocouple. TZM metal is used because of its high thermal conductivity and high melting point. In operation, the probe is inserted into molten lava with a long, stainless steel rod. The transient temperature response, recorded on a battery-powered recorder, is related to the amount of convection induced in the molten lava adjacent to the probe. Assuming that convective heat transfer is induced when the cool probe is inserted into molten lava, the expected temperature response of the probe is given by

$$\frac{T - T_{\infty}}{T_0 - T_{\infty}} = \exp\left(\frac{-2h\tau}{cpR}\right) \quad (1)$$

where T is the temperature of the probe as a function of time, τ , when the probe is inserted into lava of ambient temperature T_{∞} . T_0 is the effective solidification temperature of the lava, h is the convec-

tive heat transfer coefficient for the lava, and c , ρ , and R are the specific heat capacity, density, and radius of the probe, respectively (9).

To simplify data reduction and eliminate phase change effects due to a crust of solidified lava on the probe and subsequent remelting of the crust as the probe heats up, only data above 1050°C ($T_0 = 1050^{\circ}\text{C}$) are used in determining the convective heat transfer rate. The validity of this approach has been verified by laboratory comparisons with steady-state convection probes in molten basalt (2).

The heat transfer field measurements for the 1983 Kilauea eruption were made in lava flows that occurred during January and February 1983. Five measurements were made in lava flow that occurred during the 18th eruptive phase on the morning of 15 January. Lava fountaining began at 0333 and continued until 0855 on that morning, producing a lava flow in the vicinity of Puu Kahaualea. The heat transfer measurements were made in the edge of the lava flow at the base of Puu Kahaualea between 1100 and 1300, or 2 to 4 hours after the end of the 18th eruptive phase. Temperatures in this flow were still high (1088° to 1128°C) when the heat transfer measurements were taken. The lava consisted of approximately 90 percent (by volume) liquid, 6 percent plagioclase, 3 percent clinopyroxene, and 1 percent olivine (10).

Another major eruptive phase began at 0145 on 25 February, with sustained fountaining at vent 1123 near Puu Kahaualea. The fountaining continued for a week and produced a river of lava flowing downrift. During the afternoon of 26 February three additional heat transfer measurements were made in the edge of the lava river near Kalalua 2.5 km downrift from the erupting vent. The temperature in the lava at this point was measured at 1119°C by a thermocouple inserted in the flow. Earlier in the afternoon the temperature in a flow near the fountaining vent was measured at 1118°C.

Briggs, session leader): John Spudich, "Reception and excitation in the phototaxis of *Halobacterium halobium*"; P.-S. Song, "The sensory transduction mechanism in *Stentor coeruleus*"; M. Wada, "Intracellular localization and molecular orientation of phytochrome in fern protonemata"; L. Stryer, "Biochemistry of phototransduction in vertebrate rod outer segments." Photosensing II (W. Haupt, session leader): M. E. Feinleib, "Photosensory transduction in *Chlamydomonas*"; D. P. Hader, "Photomovement by amoebae of *Dictyostelium*"; K. Poff, "Mechanisms of sensing light direction in *Dictyostelium* and higher plants"; J. Copley, "Signals for chromatic adaptation in the Cyanobacterium *Fremyella diplosiphon*."

1 February. Ion channels in mechanotransductions (C. Kung, session leader): H. Machemer, "Mechanical and electrical circumstances of mechanotransduction in *Paramecium*"; G. Boheim, "Reconstituted ion channels of *Paramecium* cilia in planar lipid bilayers"; C. Kung, "Mutants of *Paramecium* with defective Ca channels"; A. J. Hudspeth, "Mechano-electrical transduction by vertebrate hair cells and its bearing on transduction in microorganisms." Motor apparatus of microorganisms I (Jim Spudich, session leader): A. D. Kalsner, "Gliding bacteria—regulation of social motility in *Myxococcus*"; Y. Komeda, "Regulation of flagellar genes in *Escherichia coli*"; M. Eisenbach, "Flagellar rotation in bacterial cell envelopes"; H. C. Berg, "Bacterial flagellar rotation and its chemotactic control."

2 February. Motor apparatus of microorganisms II (H. Berg, session leader): J. D. Luck, "Structure and function of *Chlamydomonas* flagella"; Jim Spudich, "Actin and myosin molecules in motion"; J. L. Rosenbaum, "Structure and assembly of *Chlamydomonas* flagella"; P. Satir, "Role of calmodulin in regulation of *Paramecium* cilia." Ca^{++} and cyclic nucleotides as regulators of motility (D. L. Nelson, session leader): H. Rasmussen, "Gain control in the Ca^{++} messenger system"; P. Devreotes, "Control of *Dictyostelium* development by cAMP"; G. Witman, "Signal transduction, Ca^{++} and control of flagellar response in *Chlamydomonas*."

3 February. The link to higher organisms (W. Shropshire, session leader): D. LeRoith, "Are vertebrate peptide hormones messenger molecules in unicellular organisms?" W. G. Quinn, "Learning in *Drosophila*: mutants defective in cAMP metabolism"; E. Kandel, "Behavior in a simple polycellular organism, *Aplysia*." Summary: general themes and future directions.

BOOKS RECEIVED

(Continued from page 46)

latory Mechanisms of Enzyme Adaptation. Roy Walker. Wiley-Interscience, New York, 1983. xxii, 382 pp., illus. \$49.95.

Molecular Biology of Parasites. John Guardiola, Lucio Luzzatto, and William Trager, Eds. Raven, New York, 1983. xiv, 210 pp., illus. \$39.50. Sero Symposium Publications from Raven Press, vol. 2.

Molecular Collision Dynamics. J. M. Bowman, Ed. Springer-Verlag, New York, 1983. xii, 158 pp., illus. \$19. Topics in Current Physics, 33.

Neutron Sources. For Basic Physics and Applications. H. H. Barschall and 14 others. Pergamon, New York, 1983. xx, 350 pp., illus. \$65. Neutron Physics and Nuclear Data in Science and Technology, vol. 2.

New Approaches to the Design of Antineoplastic Agents. Proceedings of a symposium, Amherst, N.Y., May 1981. Thomas J. Bardos and Thomas I. Kalman, Eds. Elsevier, New York, 1982. xxiv, 338 pp., illus. \$68.

Palaeoecology of Africa and the Surrounding Islands. J. A. Coetzee and E. M. van Zinderen Bakker, Eds. Vol. 15, Southern African Society for Quaternary Research. Proceedings of a conference, Pretoria, May 1981. J. C. Vogel, E. A. Voigt, and T. C. Partridge, Eds. Balkema, Rotterdam, 1982 (U.S. distributor, Merrimack Book Service, Salem, N.H.). viii, 228 pp., illus. \$27.50.

Performance of Solar Energy Converters. Thermal Collectors and Photovoltaic Cells. Papers from a course, Ispra, Italy, Nov. 1981. G. Beghi, Ed. Reidel, Boston, 1983 (distributor, Kluwer Boston, Hingham, Mass.). viii, 528 pp., illus. \$69.50.

Personality and Life-Style of Young Male Managers. A Logical Learning Theory Analysis. Joseph F. Rychlak. Academic Press, New York, 1982. xxii, 294 pp., illus. \$29.50.

Review of Biological Research in Aging. Vol. 1. Morton Rothstein and five others, Eds. Liss, New York, 1983. x, 414 pp. \$64.

Risk/Benefit Analysis. The Microwave Case. Nicholas H. Steneck, Ed. San Francisco Press, San Francisco, 1982. xiv, 232 pp. \$15.

Robot Motion. Planning and Control. Michael Brady, John M. Hollerbach, Timothy L. Johnson, Tomás Lozano-Pérez, and Matthew T. Mason. MIT Press, Cambridge, Mass., 1983. xviii, 586 pp., illus. \$37.50. MIT Press Series in Artificial Intelligence.

The Role of Fire in Northern Circumpolar Ecosystems. Papers from a conference, Fredericton, Canada, Oct. 1979. Ross W. Wein and David A. MacLean, Eds. Published on behalf of the Scientific Committee on Problems of the Environment of the ICSU by Wiley, New York, 1983. xxii, 322 pp., illus. \$59.95. SCOPE 18.

Scientific Perspectives on Animal Welfare. Proceedings of a conference, Chevy Chase, Md., Nov. 1981. W. Jean Dodds and F. Barbara Orlans, Eds. Academic Press, New York, 1982. xiv, 132 pp. \$14.50.

A Search for Structure. Selected Essays on Science, Art, and History. Cyril Stanley Smith. MIT Press, Cambridge, Mass., 1983. x, 410 pp., illus. Paper, \$15. Reprint of the 1981 edition.

The Secular Ark. Studies in the History of Biogeography. Janet Browne. Yale University Press, New Haven, Conn., 1983. x, 274 pp., illus. \$27.50.

Seeds of Promise. The First Real Hearings on the Nuclear Arms Freeze. Organized by the Federation of American Scientists. Brick House, Andover, Mass., 1983. x, 214 pp., illus. Paper, \$9.95.

The Sheep as an Experimental Animal. J. F. Hecker. Academic Press, New York, 1983. x, 216 pp., illus. \$35.

Silicides for VLSI Applications. S. P. Murarka. Academic Press, New York, 1983. xii, 200 pp., illus. \$19.50.

Silicon Geochemistry and Biogeochemistry. S. R. Aston, Ed. Academic Press, New York, 1983. x, 248 pp., illus. \$42.50.

Skew Fields. P. K. Draxl. Cambridge University Press, New York, 1983. x, 182 pp. Paper, \$19.95. London Mathematical Society Lecture Note Series, 81.

Thermal Conductivity 16. Proceedings of a conference, Chicago, Nov. 1979. David C. Larsen, Ed. Plenum, New York, 1983. xx, 624 pp., illus. \$79.50.

Third Caltech Conference on Very Large Scale Integration. Pasadena, Calif., Mar. 1983. Randal Bryant, Ed. Computer Science Press, Rockville, Md., 1983. xiv, 430 pp., illus. \$36.95.

Time-Dependent Failure Mechanisms and Assessment Methodologies. Proceedings of a meeting, Gaithersburg, Md., Apr. 1982. James G. Early, T. Robert Shives, and John H. Smith, Eds. Cambridge University Press, New York, 1983. x, 320 pp., illus. \$49.50.

World Survey of CAM. J. Hatvany, Ed. Butterworths, Boston, 1983. viii, 142 pp., illus. Paper, \$39.95. A CAD Special Publication.

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Biopsychologist, Ph.D. (1983). Seeking postdoctoral or long-term position in academic, governmental, or industrial setting. Research experience: behavioral development in mammals and fish ethology (with field experience.) Strong quantitative skills, knowledge of experimental design and computer skills. Considerable teaching experience (statistics, motivation, human development, learning). Experienced in recording biogenic electric fields. Box 276, SCIENCE. X

Biostatistician (master's)/Technical Writer, seeking research or industry post in Boston. Ten years of experience in research design, survey sampling, and consulting. Computer skills include SAS, SAS-GRAPH, other packages and languages. Box 277, SCIENCE. X

Employer Wanted, for high-performance thinking machine. Advancement of science must be first priority. Box 236, SCIENCE. 10/7, 14, 21

Flow Cytometry. Ph.D. Experience in FCM application for clinical and experimental cancer research. Seeks position to run FCM facility for independent research and cooperation. Box 278, SCIENCE. X

Immunologist. Ph.D. 1970. University researcher with extensive background in cellular immunity, lymphocyte cell biology, and lymphokines. Current investigation of interferons in lymphocyte-mediated target cell killing. Excellent publications and references. Mature and dedicated individual seeking position in academia or industry. Box 268, SCIENCE. 10/7, 14

POSITIONS WANTED

Biostatistician/Mathematical Statistician. Ph.D. (1973, Stanford). Ten years of research and consulting experience in clinical trials, analysis of diagnostic procedures, prognostic factors in chronic disease, dose-response methods, case-control studies. Many applied and theoretical papers in refereed journals. Multilingual. Seeks senior biostatistical, consulting, research position. Box 271, SCIENCE. X

Cytogeneticist. Ph.D. Seeks interdisciplinary research/teaching opportunity in agricultural or biomedical developmental/reproductive/cellular biology/genetics. Teaching, tissue culture, light/electron microscopy experience. Prefers coastal United States/foreign. Box 274, SCIENCE. X

Microbiologist. Ph.D., broad background in biology. Associate professor, tenured, wishes to relocate away from highly industrialized area. Experience in virology, applied immunology, oral bacteriology, animal physiology, animal and plant tissue culture. Research and teaching publications. Box 272, SCIENCE. X

Ph.D. Pharmacologist. Five years of industrial experience with expertise in cancer chemotherapy, antimetastasis, reverse transformation, and carcinogenesis research. Desires industrial research position. Box 279, SCIENCE. 10/7, 14, 21, 28

Recently retired Canadian professor, **Physiological Ecology, Biogeography**, seeks visiting lectureship for 2-week to 4-month period in warmer climes, January 1984; 100 publications and one book. A DRIP (ORINS) and former operational pilot, RAF Bomber and Coastal Commands. Good field person. Served as Canada NRC—USSR Academy of Sciences exchange scientist. Wife and partner, Ph.D., botany, Cornell. Box 275, SCIENCE. X

Scientific Photographer. B.A. in biology, 7 years of experience. Strong research background in microbiology, botany, and zoology. Seeks position with university or industry. W. S. Ormerod, Harvard University, Harvard Forest, Petersham, Mass. 01366; telephone: 617-724-3285. 10/7, 14

POSITIONS OPEN

ASSISTANT DEAN FOR RESEARCH AND GRANT ADMINISTRATION in a growing state supported medical school. Responsibilities include the formation and implementation of policies relevant to development of research programs. Responsibilities also include preaward and postaward activities related to the acquisition and administration of research grants. Candidates should hold an earned doctorate degree and should have experience in medical research and administration. Applicants should send letter and curriculum vitae to: **Dr. Carl E. Jones, Department of Physiology, Texas College of Osteopathic Medicine, Camp Bowie at Montgomery, Fort Worth, Texas 76107. Texas College of Osteopathic Medicine is an Equal Opportunity/Affirmative Action Employer.**

MENTAL RETARDATION RESEARCH CENTER (MRRC), University of California, Los Angeles (UCLA). Applications are invited for an **ASSISTANT PROFESSORSHIP**. Candidates should have research interests in developmental neurobiology of the central nervous system with emphasis on molecular biology, pharmacology, or immunohistochemistry. Submit curriculum vitae and three references by 1 December 1983 to: **Developmental Biology Committee, c/o Director, MRRC, 760 Westwood Plaza, Los Angeles, Calif. 90024. UCLA is an Equal Opportunity/Affirmative Action Employer.**

THE DEPARTMENT OF BIOCHEMISTRY, CORNELL UNIVERSITY MEDICAL COLLEGE, invites applications for a position of **ASSISTANT PROFESSOR**. Candidates should have a strong background in biochemistry and molecular biology and will be expected to establish a strong independent research program. Other duties include teaching of medical students and the supervision of graduate students. Women and minority candidates are encouraged to apply. Send detailed curriculum vitae, list of publications and research support, and a brief statement of research interests before 1 December 1983 to: **Search Committee, Department of Biochemistry, Cornell University Medical College, 1300 York Avenue, New York, New York 10021.** Three letters of recommendation should also be sent. *Cornell University Medical College is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSORSHIP Jules Stein Eye Institute—UCLA

The Department of Ophthalmology and the Jules Stein Eye Institute, University of California, Los Angeles (UCLA) School of Medicine, are seeking applicants for an assistant professorship in ophthalmology. Individuals dedicated to a career in basic vision research and teaching are encouraged to apply. The Search Committee favors candidates with an interest and background in molecular biology or a related field.

Applications should be submitted with curriculum vitae, bibliography, and a letter discussing career goals to:

**Dean Bok, Ph.D.
Chairman, 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 irrespective of sex or ethnic origin. UCLA is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT OR ASSOCIATE PROFESSOR. The Chesapeake Biological Laboratory (CBL) of the University of Maryland Center for Environmental and Estuarine Studies (UMCEES) invites applications for a tenure-track faculty position in marine or estuarine chemistry or geochemistry. The successful candidate will develop a program of research in his or her own field of interest, will play an important role in a growing program of chemistry and geochemistry at CBL, and will participate in interdisciplinary research programs with other scientists with specialties in chemistry, sedimentology, and physical and biological oceanography. Some preference will be given to candidates with interests in trace or major element geochemistry or organic geochemistry particularly in relation to sediments. However, all candidates with interests in the broad subject areas are encouraged to apply.

Applicants should have a strong postdoctoral research record, demonstrated interests in interdisciplinary research, and an interest in teaching and graduate research. Curriculum vitae, description of research interests, and a list of three to five references should be sent to: **Dr. Jay C. Means, Chairman, Search Committee, UMCEES, Chesapeake Biological Laboratory, Box 38, Solomons, Maryland 20688-0038.** Applications received by 31 October 1983 will be assured full consideration. *The University of Maryland is an Affirmative Action/Equal Opportunity Employer.*

The Department of Microbiology, University of California, Los Angeles (UCLA), invites applications for **two tenure track positions** at the **ASSISTANT PROFESSOR** level. Applicants for the first position should have training and research experience in medical microbiology and will teach a required laboratory and lecture course in this subject. Applicants for the second position should have training and research experience in microbial and molecular genetics and will teach a required course in the subject. Candidates should be motivated toward excellence in teaching and research. Applicants should submit, by 1 January 1984, curriculum vitae and names of three references to: **Search Committee, Dr. F. A. Eiserling, Chairman, Department of Microbiology, UCLA, Los Angeles, Calif. 91124. An Equal Opportunity Employer.**

ASSISTANT PROFESSOR, CELL PHYSIOLOGIST DEPARTMENT OF BIOLOGY SYRACUSE UNIVERSITY

Applications for a tenure-track position are invited from individuals with doctoral training in cell physiology and postdoctoral research experience in an academic setting. Applicants with outstanding potential in some area of the function of cell membranes will be considered. Successful candidates will, in addition to carrying out a research program, teach a course in physiology to undergraduate students, and a specialized seminar course to graduate students. Applications should include curriculum vitae (with publications and grant support), a statement of a proposed research plan, and the names of three scientists willing to write letters of recommendation. Applications should be sent by 15 January 1984 to: **Dr. Philip Dunham, Department of Biology, Syracuse University, Syracuse, New York 13210.** *Syracuse University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR, BIOCHEMISTRY/MOLECULAR BIOLOGY

The Department of Biochemistry at the University of Illinois at Urbana-Champaign invites applications for a tenure-track position available in the fall of 1984. While outstanding applicants with research interests in any area of biochemistry will be considered, preference will be given to applicants in molecular biology. Candidates should have demonstrated exceptional research ability and be prepared to establish an outstanding research program and to contribute to graduate and undergraduate teaching programs. A Ph.D. and postdoctoral experience in biochemistry or a related area are required. For full consideration, candidates should submit curriculum vitae, including a brief summary of their research interests and three letters of reference, by 1 December 1983 to:

**The Biochemistry Search Committee
Department of Biochemistry
University of Illinois
1209 West California
Urbana, Illinois 61801
Telephone: 217-333-2013**

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

ASSISTANT PROFESSOR OF BIOCHEMISTRY. Twelve-month, tenure-track position in a rapidly developing medical school. Postdoctoral experience required. Primary prerequisite is promise in development of an active research program complementary to interests of the department and in teaching medical and Ph.D. students. Submit résumé, research plans, and names of three references to: **Dr. W. R. Frisell, Chairman, Department of Biochemistry, School of Medicine, East Carolina University, Greenville, North Carolina 27834. Equal Opportunity through Affirmative Action.**

ASSISTANT PROFESSOR OF CHEMISTRY, Brown University, in organic chemistry. Applications presenting evidence of exceptional qualifications in organic chemistry or closely related fields and promise for outstanding research and teaching at all levels of organic chemistry are invited. Postdoctoral experience is desirable. Applicants should submit complete curriculum vitae, including graduate and undergraduate transcripts, publication list, and statement of research plans and requirements, and should have three letters of recommendation sent to: **Professor Kathryn A. Parker, Search Committee, Department of Chemistry, Brown University, Providence, Rhode Island 02912.** The deadline for filing applications is 1 December 1983. *Brown University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR—Developmental biology/genetics. Tenure track, to start 1 September 1984. Ph.D. in developmental biology with a background in genetics. Teaching excellence, commitment to liberal arts, research and professional activity are essential. Primary responsibilities include general biology, genetics, vertebrate embryology, vertebrate comparative anatomy, and human physiology. Faculty committee participation and student advisement also expected. Whittier, located in suburban Los Angeles, is a private liberal arts college. Letter of application, résumé, transcripts, and three letters of recommendation should be forwarded by 1 January 1984 to: **Biology Search Committee, Dr. Stephen R. Goldberg, Department of Biology, Whittier College, Whittier, Calif. 90608. An Equal Opportunity/Affirmative Action Employer.**

HARVARD MEDICAL SCHOOL DEPARTMENT OF GENETICS

The Department of Genetics at the Harvard Medical School invites qualified Ph.D. or M.D. scientists to submit applications for an appointment at the **ASSISTANT PROFESSOR** level. Candidates with demonstrated interests in molecular approaches to understanding the genetics of development, the nervous system, cellular growth and regulation are particularly encouraged to apply, but all candidates pursuing imaginative solutions to contemporary genetic problems, including those of man, will be given serious consideration. Applicants should submit, prior to 1 January 1984, curriculum vitae, reprints, statement of research interests, and the names of three references to: **Dr. Philip Leder, Chairman, Department of Genetics, Harvard Medical School, 45 Shattuck Street, Boston, Massachusetts 02115.**

Harvard University is an Equal Opportunity/Affirmative Action Employer. Qualified women and minority group members are strongly encouraged to apply.



The International Atomic Energy Agency seeks **INSPECTION ASSISTANTS FOR SAFETY GUARDS** to provide assistance to professional inspectors at duty stations and during world-wide inspections of facilities. The work is divided into two main areas of activities:

- technical support activities involving surveillance equipment (cameras, T.V., seals), measurement and sampling of nuclear materials and use of NDA equipment; and
- checking of accounting records, calculation of book inventories and related activities.

General education up to university entrance level essential. Preference will be given to candidates who either have relevant technical experience in nuclear material measurement and sampling techniques, and familiarity with plant process equipment, or to those who have practical experience in material or financial accounting and familiarity with EDP equipment. Fluency in English, French, Russian or Spanish essential. Proficiency in English required. Knowledge of other languages an advantage.

Fixed Term contract for two years with the possibility of further extension if service satisfactory. Tax-free emoluments, depending on qualifications and experience, up to Austrian Schillings 301,176.—per annum. Non-resident's allowance, if applicable, AS. 26,000.—per annum.

Send Curriculum Vitae indicating your nationality, and quoting Vacancy Notice No. 250/83 to **Division of Personnel, International Atomic Energy Agency, P.O. Box 100, A-1400 Vienna, Austria.**

U.S. DEPARTMENT OF ENERGY Summer Research Opportunities

Faculty members, postgraduates, graduate and undergraduate students are invited to apply for appointments to selected U.S. Department of Energy (DOE) research facilities. Faculty and student appointments are for the summer. Postgraduate and graduate student appointments are for six months to one year.

Challenging opportunities for research training are available in a broad range of energy research and engineering activities directed toward energy production, utilization, conservation, and their societal implications. The participating DOE laboratories offer unique combinations of specialists, facilities, and programs.

Participating DOE research facilities are located in Oklahoma, Pennsylvania, Puerto Rico, South Carolina, Tennessee, and West Virginia.

Information and application materials (indicate your academic status) may be obtained from

**DOE Laboratory University
Cooperative Programs
University Programs Division
Oak Ridge Associated Universities
P.O. Box 117
Oak Ridge, Tennessee 37831**

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

POSITIONS OPEN

ASSISTANT PROFESSOR OF ENTOMOLOGY

The Department of Entomology, University of Missouri—Columbia, invites applications for the above 12-month, tenure-track faculty position in insect behavior available immediately. Ph.D. in entomology or related discipline, demonstrated capacity to conduct independent field and laboratory research, and ability to communicate and teach effectively are required. Postdoctoral experience is desirable. Research responsibilities (80 percent) will involve cause and effect relationships which lead to insect-induced stress on field and forage crops. The successful candidate will be expected to develop a strong, independent research program in both basic and applied areas of insect behavior. Teaching responsibilities (20 percent) will include courses in general entomology and area of specialty, plus supervision of graduate students and advisement of undergraduates. Candidates should submit, by 18 November 1983, a statement of research and teaching objectives and goals, résumé, reprints of major publications, transcripts, and request four letters of reference, all to be sent to: **Chairman, Search Committee, Department of Entomology, 1-87 Agriculture Building, University of Missouri, Columbia, Missouri 65211.**

TENURE-TRACK POSITION, DEPARTMENT OF MEDICINE, STANFORD. An appointment as assistant professor or associate professor is available to a laboratory investigator-clinician to join a major academic program. Candidate should have independent investigative capability and have training in medical oncology. *Stanford is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.* Send résumé, which will be treated confidentially, to: **Dr. Ronald Levy, Chairman, Search Committee, Division of Oncology, Stanford University School of Medicine, Room S025, Stanford, Calif. 94305.**

ASSISTANT SCIENTIST in genetics. A molecular geneticist is required for an established program investigating the genetic control of protein structure and synthesis. Applicants will be expected to supervise and execute an independent research program in DNA cloning and sequencing and will train and supervise others. Ph.D. in the field of molecular biology. Applicants should be proficient in recombinant DNA techniques with at least 4 years of postdoctoral experience, including 2 years of DNA sequencing. Expertise in bacterial genetics, and in recombinant plasmid and phage construction for cloning structural genes is essential. Experience in the construction and expression of cDNA libraries is also required. A background in protein chemistry will be advantageous. This is a long-term position requiring proven research ability (demonstrated through original publications), organizational skill, and the ability to contribute fundable grant proposals to the group. Salary: \$20,000; 40 hours per week. Contact: **Bill Janek, Wisconsin Job Service, 206 Broom Street, Madison, Wis. 53703; telephone 608-266-3678.** This advertisement was not paid for by Job Service Funds. *This position is with an Equal Opportunity Employer.*

BIOCHEMISTRY

Assistant professor, Department of Biochemistry, Brandeis University. This is a tenure-track position; the field of interest is open. Send résumé, a brief research proposal, and names of three references to: **Dr. William P. Jencks, Department of Biochemistry, Brandeis University, Waltham, Mass. 02254-9110.** *Brandeis University is an Equal Opportunity/Affirmative Action Employer.*

CELL/DEVELOPMENTAL BIOLOGY. A position at the assistant professor level will become available 1 July 1984 for an individual who has completed 2 to 3 years of postdoctoral training and is qualified to teach histology, embryology, or cell biology. The successful applicant will be expected to establish and maintain a vigorous research program preferably in one of the following areas: craniofacial growth and development; the regulation of gene expression; cell-cell/cell matrix interaction. Current in-house research is focused on the ontogeny of B cells and skeletal tissue, and hormone action at the subcellular level. Interested parties should submit curriculum vitae, representative reprints, a research summary, and the names of three established referees to: **Professor A. J. Kahn, Division of Cell Biology, Washington University School of Dental Medicine, 4559 Scott Avenue, St. Louis, Mo. 63110.** Deadline: 15 December 1983. *An Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF MICROBIOLOGY AND IMMUNOLOGY

Applications are invited from highly qualified individuals for a full-time, tenure-track position. Applicants must hold a Ph.D. or equivalent degree, and have at least 2 years of productive postdoctoral research experience in molecular genetics. Advanced knowledge of molecular genetic systems in prokaryotic organisms and their viruses is preferred. The individual will develop and maintain a strong, grant-supported, independent research program and participate in training graduate students and postdoctorals. Teaching in graduate and professional level courses is required. Send curriculum vitae, a statement of research interests, and the names of three references by **15 December 1983** to: **Dr. Paul V. Phibbs, Department of Microbiology and Immunology, P.O. Box 678, Medical College of Virginia, Virginia Commonwealth University, Richmond, Va. 23298.** *An Equal Opportunity/Affirmative Action Employer*

The Department of Veterinary Pathobiology, University of Illinois, College of Veterinary Medicine, invites applications for an **ASSISTANT PROFESSOR** position (tenure track) in **veterinary parasitology.** The candidate should have a D.V.M./Ph.D. or Ph.D. degree with evidence of training or experience in veterinary parasitology. Duties include teaching parasitology to veterinary and graduate students and development of a strong research program. Special consideration will be given to applicants whose research interests complement existing programs. Research in the department is conducted in microbiology, immunology, pathology, preventive medicine, public health, epidemiology, and parasitology. Salary is negotiable. Inquiries, including a letter of application, curriculum vitae, and three references, should be sent to: **Dr. Kenneth S. Todd, Jr., Chair, Search Committee, Department of Veterinary Pathobiology, College of Veterinary Medicine, 2001 South Lincoln Avenue, University of Illinois, Urbana, Ill. 61801; telephone: 217-333-4689.** To ensure full consideration, applications must be received by 31 January 1984; starting date as soon as possible thereafter.

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

George Washington University, Department of Medicine. **ASSISTANT RESEARCH PROFESSOR** position available immediately to work on studies of microvascular blood flow of sickle erythrocytes; 1 to 2 years of relevant experience required. Curriculum vitae, bibliography, and references to: **Jorge C. Rios, M.D., 2150 Pennsylvania Avenue, NW, Suite 407, Washington, D.C. 20037.** *Affirmative Action/Equal Opportunity Employer.*

ASSISTANT RESEARCH SCIENTIST. Prefer Ph.D. cell biology, biochemistry, or related area. May consider master's. Background in molecular biology with opportunity for independent work with Dr. R. Mufson, Department of Environmental Medicine, to study molecular biology and biochemical aspects of carcinogenesis in cell culture. Send curriculum vitae to: **Miriam Kerans, Recruitment Coordinator, New York University Medical Center, 560 First Avenue, New York, N.Y. 10016.** *An Affirmative Action/Equal Opportunity Employer, M/F.*

University of New England College of Osteopathic Medicine

ASSOCIATE DEAN FOR BASIC SCIENCES

The University of New England College of Osteopathic Medicine invites applications for the position of Associate Dean for Basic Science.

Position: Twelve-month, full-time administrator. Coordinate basic science curriculum and budget for first 2 years of a 4-year program. Liaison with undergraduate, research, and osteopathic community. General administrative duties.

Requirements: Ph.D. in basic science. Proven college administrative and medical student education experience in a university with medical/health profession students. Strong interpersonal skills required.

Preferred: Experience in faculty organization and/or administration in school of osteopathic medicine.

Applications may be submitted to and job description solicited from:

**University of New England
College of Osteopathic Medicine
Eleven Hills Beach Road
Biddeford, Maine 04005**

Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

BIOCHEMICAL ENGINEER (RESEARCH)

Biotechnology Australia Pty. Ltd., a subsidiary of CRA Limited, is a research and development company that is seeking to develop the potential of biotechnology in Australia. The company is established in fully equipped laboratories in the North Shore area of Sydney, and has a staff of approximately 65.

A senior position is currently available for a biochemical engineer to conduct and supervise process and product research on a wide range of biological (mainly microbial) products. Candidates must possess a Ph.D. or equivalent combined with formal training or work experience in biochemical engineering. Industrial experience in the areas of vaccines or microbially derived drugs is highly desirable.

The remuneration package will be appropriate to the high levels of skill and experience demanded.

For further particulars, write, enclosing full curriculum vitae, to:

Director of Technology
Biotechnology Australia Pty. Ltd.
P.O. Box 20
Roseville, NSW 2069
Australia

CHAIRMAN, COMPUTER AND ELECTRONICS DEPARTMENT

The Armed Forces Radiobiology Research Institute is seeking an individual to serve as chairman of the Computer and Electronics Department. This Institute, a command of the Defense Nuclear Agency, is the principle radiobiology research laboratory for the Department of Defense. The chairman supervises approximately 25 employees involved in instrumentation design, software design, and biomedical and electronic equipment maintenance. The chairman is responsible for directing the design and development of electronic and computer devices which advance radiobiology research; for developing advanced equipment for the capture, conversion, and transmission of data; and for designing instrumentation systems. Mandatory qualifications include knowledge of high-level programming languages, hardware interfacing, instrumentation system design, principles of software engineering, and management experience. A desirable qualification is a Ph.D. in a physical, biological, or computer science. This Civil Service position is available immediately. Salary ranges from \$41,277 to \$53,661. Direct inquiries to: **Vince Ackermann at 202-295-1426**. Submit application, including SF-171 and curriculum vitae, by 30 November 1983 to: **The Armed Forces Radiobiology Research Institute, Civilian Personnel Office, Bethesda, Md. 20814**. Reference: **announcement number 43/83**. An Equal Opportunity Employer.

CELLULAR IMMUNOLOGIST

Postdoctoral position. Basic and clinical research on cellular immunity to cytomegalovirus with emphasis on cytotoxicity assays. Send curriculum vitae and three letters of reference to: **Stuart E. Starr, M.D., Children's Hospital of Philadelphia, 34th Street and Civic Center Boulevard, Philadelphia, Pa. 19104**. *Children's Hospital of Philadelphia is an Equal Opportunity/Affirmative Action Employer.*

HUMBOLDT STATE UNIVERSITY Dean, College of Science

Dean Raymond Barratt has retired from the position of dean of the College of Science at Humboldt State University. The University, which is the northernmost campus of the California State University, invites applications and nominations for the appointment of his successor. Departments of Biological Sciences, Chemistry, Environmental Resources Engineering, Geology, Home Economics, Industrial Arts and Technology, Mathematics, Nursing, and Physics and Physical Science comprise the College of Science.

The application deadline is 1 November 1983. The appointee should be available no later than 1 September 1984. Write or call:

Milton Dobkin
Vice President for Academic Affairs
Humboldt State University
Arcata, California 95521
Telephone: 707-826-3722

for a copy of the complete description announcement prior to forwarding application.

Humboldt State University is an Equal Opportunity Employer.

7 OCTOBER 1983



Government
of Canada

Gouvernement
du Canada

VISITING FELLOWSHIPS in CANADIAN GOVERNMENT LABORATORIES

The Government of Canada offers Fellowships for 1984-85 on behalf of the following Canadian government departments and agencies: Agriculture Canada; Department of Communications—Communications Research Centre; Department of National Defence; Energy, Mines and Resources Canada; Environment Canada—Atmospheric Environment Service, Canadian Forestry Service, Environmental Conservation Service—(Inland Waters Directorate, Lands Directorate, Canadian Wildlife Service); Fisheries and Oceans Canada—Atlantic Fisheries, Pacific and Freshwater Fisheries, Ocean Science and Surveys; Health and Welfare Canada—Health Protection Branch; National Museums of Canada—Museum of Natural Sciences; National Research Council Canada; Atomic Energy of Canada Limited.

Fellowships have an annual value of \$25,488 and are subject to Canadian income tax. The travel allowance is also considered a taxable benefit. Appointments are made for one year; renewals for a second year are possible.

Candidates should normally have received a doctorate degree or equivalent experience within the last five years. Equivalent experience is considered to be a master's degree plus at least two years of experience beyond this degree together with a demonstrated capability for conducting successful independent research. There are no restrictions limiting the nationality of applicants, however, successful candidates who are not Canadian citizens or permanent residents of Canada must satisfy all of the Canadian immigration requirements before commencing tenure of the fellowship. Six laboratories of the Department of National Defence can only consider applications from Canadian citizens, however, three military colleges are prepared to consider applications without citizenship restrictions.

Further information may be obtained from the Scholarships Office, Natural Sciences and Engineering Research Council of Canada, Montreal Road, Ottawa, Ontario, Canada K1A 0R6.

The deadline date for receipt of applications to NSERC is *January 15, 1984* for consideration in the 1984-85 competition.

Canada



The World Health Organization
invites applications for the post of

RESEARCH SCIENTIST/MICROBIOLOGIST for its Diarrhoeal Diseases Control Programme, Geneva

Responsible for organization and implementation of the Programme's research in bacterial enteric infections, primarily in the area of microbiology, epidemiology and immunology (including vaccine development).

Degree at doctoral level in bacteriology (preferably in the field of enteric infections) or degree in medicine with recognized post graduate degree/diploma/training in bacteriology/immunology. At least five years' experience in research and thorough knowledge of current bacteriological/immunological techniques required for studies of acute enteric infections. Excellent knowledge of English. Knowledge of French desirable.

Qualified candidates should send their detailed curriculum vitae, referring to "CDD/83", to:

Personnel (MPR)
World Health Organization
CH - 1211 Geneva 27

Only candidates under serious consideration will be contacted.

POSITIONS OPEN

BIOCHEMIST, assistant professor, August 1984. The University of Akron, Department of Chemistry, announces a position for a biochemist with principal interests in enzymology or hormonal regulation. Postdoctoral experience is necessary. The faculty member can expect to participate in teaching at the undergraduate and graduate levels in a Ph.D. degree granting department. A vigorous research program is expected. Send résumé, outline of future research plans, and names of at least three references to: **Dr. Daniel Smith, Department of Chemistry, The University of Akron, Akron, Ohio 44325**. Applications close 4 November 1983. *The University of Akron is an Equal Opportunity/Affirmative Action Employer.*

COMPUTER SCIENTIST to intergrate with Environmental Science Programs, teach and develop courses, improve campus-wide microcomputer facilities. Minimum: master's degree. Original contract: balance of academic year at a rate of \$13,500 to \$16,000 per annum. Reappointment: to be negotiated. Deadline: 28 October for January appointment. Send letter of application, résumé, and names plus telephone numbers of three references to: **Steven Resh, Environmental Sciences, Unity College, Unity, Maine 04988**. Telephone: 207-948-3131.

DEAN, COLLEGE OF LETTERS AND SCIENCE, MONTANA STATE UNIVERSITY

Nominations and applications are invited for the position of dean of the College of Letters and Science at Montana State University, a multifaceted land-grant institution of 11,000 students. The College, composed of 300 faculty and over 1800 undergraduate and graduate majors, seeks a candidate with the following qualifications: a terminal degree in a discipline represented in the college; an established reputation for research and creativity; experience in university teaching, preferably at both the undergraduate and graduate levels; knowledge of and appreciation for the teaching methods, scholarship, and educational goals in the departments of Letters and Science; experience in budgetary matters and personnel management; and demonstrable leadership and administrative capabilities.

Starting date is 1 July 1984, and salary is negotiable. Interested individuals should send a formal letter of application addressing interest and qualifications; a résumé; and names, addresses, and telephone numbers of three references by 15 December 1983 to:

Office of Academic Vice President
Search Committee: Dean of Letters and Science
211 Montana Hall
Montana State University
Bozeman, Montana 59717

An Equal Opportunity/Affirmative Action Employer

DEAN—COLLEGE OF PHARMACY

The University of Nebraska Medical Center (UNMC) is seeking nominations/applications for the position of Dean of the College of Pharmacy. Five colleges, one school, three institutes, and one hospital comprise the medical center. The College of Pharmacy offers the doctor of pharmacy degree as its sole professional degree. The Departments of Biomedical Chemistry, Pharmaceutics and Pharmacodynamics and Toxicology offer master's and/or Ph.D. degree programs. Graduates of an accredited College of Pharmacy are preferred. Applicants should send a letter of interest, current curriculum vitae, and the names of three references to:

Dr. W. O. Berndt
Dean, Graduate Studies
University of Nebraska Medical Center
42nd Street and Dewey Avenue
Omaha, Neb. 68105

The date for receipt of nominations/applications is 15 November 1983.

UNMC is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR, School of Health Sciences; tenure-track position available January 1984. Ph.D. in allied health discipline and college teaching experience required; administrative experience desirable. Preferred teaching areas are clinical fields such as physiology, anatomy, microbiology, and so forth. Preference will be given to candidates who are active in allied health organizations and who have demonstrated ability to obtain outside funding. Nominations or letters of application with curriculum vitae should be addressed to: **P. Douglas Kindschi, Dean of Science and Mathematics, Grand Valley State College, Allendale, Michigan 49401**. *Grand Valley is an Affirmative Action Employer.* Applications will be received until 31 October 1983.

POSITIONS OPEN

Nominations and applications are invited for the position of **DEAN OF THE SCHOOL OF MEDICINE** at the University of Colorado.

The dean is the chief executive officer of the Medical School who is directly responsible to the Chancellor of the University of Colorado Health Sciences Center.

Responsibilities include the development and maintenance of quality educational, clinical practice, and research programs, the promotion of excellence in scholarly activities, and leadership in academic policies and in developing new programs. In addition, the competent administration of budgetary matters pertaining to education, research, clinical, and faculty affairs is required.

Qualified candidates must have either an M.D. or a Ph.D. degree with administrative experience comparable to that of a chairperson of a department in a School of Medicine and of an active investigator in original research endeavors.

All interested candidates and nominations should include a copy of their curriculum vitae and a list of five references to be submitted no later than 1 December 1983 to the following:

Dr. Edgar L. Makowski
Chairman, Search Committee for Dean
of the School of Medicine
Box A-077
4200 East Ninth Avenue
Denver, Colorado 80262

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

DEVELOPMENTAL BIOLOGY. Duties include teaching a course in developmental biology, a freshman level biology course, and departmental chairmanship. Requirements: an earned doctorate in biology, demonstrated ability in teaching, and evidence of potential in leadership and administration. Rank and salary are dependent upon qualifications. Letters of application (or nomination) and current academic résumé should be sent to: **Dr. Robert Bland, Department of Biology, College of St. Thomas, St. Paul, Minn. 55105**, before 1 February 1984. *An Equal Opportunity/Affirmative Action Employer.*

DIRECTOR NATURAL RESOURCES RESEARCH INSTITUTE UNIVERSITY OF MINNESOTA, DULUTH

The Institute: Newly established, primary mission technical research relating to environmentally sound commercial development of minerals, biomass energy, water and forest products resources of Minnesota.

The position: Available 1 January 1984. Director to provide executive-level administration in establishment and operation of institute. Salary open.

Qualifications: Desire 5 to 10 years of executive-level administration of major technical research facility, research accomplishments, earned doctorate. Minimum: 3 to 5 years of administrative experience in technical research facility, research accomplishments, baccalaureate degree.

Applications: Postmark by Monday, 31 October, application letter, current résumé, and names, addresses, and telephone numbers of three references to:

Dean David A. Vose
104 SBE Building
University of Minnesota, Duluth
Duluth, Minn. 55812

The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

One full-time position in the Department of Psychiatry, University of Michigan, as **DIRECTOR OF TRAINING** (Child Fellowship Program). Responsibilities include training program administration, leadership of an outpatient team, house officer and medical student teaching, and development of programmatic research. Applicants must have demonstrated interest and accomplishments in research and clinical skills. Board-eligibility or -certification in child psychiatry is required. Appointment at academic rank appropriate to qualifications and experience. Send curriculum vitae and names and addresses of three references to:

George C. Curtis, M.D.
Department of Psychiatry
University of Michigan Hospitals
Ann Arbor, Michigan 48109

Code 09B0. *A nondiscriminatory, Affirmative Action Employer.*

POSITIONS OPEN

DIRECTOR—VERMONT REGIONAL CANCER CENTER. Physician and/or basic scientist with strong background and evidence of significant accomplishment in clinical and/or fundamental cancer biology. An outstanding record of research important. Leadership and administrative experience in an academic medical center highly desirable. The director will guide the future development of a functioning, highly successful center currently involved in both clinical and basic science research. *Women and members of minority groups are encouraged to apply.* Please forward curriculum vitae to: **John E. Craighead, M.D., Chairman, Search Committee for Director of Vermont Regional Cancer Center, Department of Pathology, University of Vermont, Medical Alumni Building, Burlington, Vermont 05405**. Responses will be accepted until 15 November 1983.

DIRECTOR OF SCIENTIFIC AFFAIRS

The American Lung Association, a voluntary health agency with state and local affiliates, seeks an individual to provide scientific and medical counsel to its programs and publications. The director will have a close relationship with the organization's prestigious medical section, the American Thoracic Society. Applicants must have a medical or doctoral degree in science and experience in pulmonary medicine or related field. This leadership position is located at national headquarters in New York City and is preferably full time. Salary is negotiable. Apply to: **Dr. Robert Mellins, American Lung Association, 1740 Broadway, New York, N.Y. 10019**.

ELECTRONIC ENGINEER/ TECHNICAL SPECIALIST

For Department of Physiology and Biophysics. Bachelor's degree in electrical engineering, physics, or computer science required, in addition to 3 to 5 years of experience. Salary range: \$14,715 to \$25,770. Responsibilities include design, construction, and modifications of apparatus; maintenance and troubleshooting; limited instruction of graduate students. Reply to: **Dr. William G. Van der Kloot, Chairman, Department of Physiology and Biophysics, Health Sciences Center, State University of New York (SUNY) Stony Brook, Stony Brook, New York 11794**. *SUNY Stony Brook is an Equal Opportunity/Affirmative Action Employer.* AK 721B.

ELECTRON MICROSCOPIST

Experienced individual with M.S. or Ph.D. to manage TEM-SEM facility, teach EM technique to students, and participate in ongoing research on regeneration and aging of the nervous system. Send inquiries to: **Dr. Raymond J. Lasek, Department of Developmental Genetics and Anatomy, School of Medicine, Case Western Reserve University, Cleveland, Ohio 44106**.

SCHOOL OF PUBLIC AND ENVIRONMENTAL AFFAIRS INDIANA UNIVERSITY

ENVIRONMENTAL TOXICOLOGIST (assistant or associate professor). Tenure-track position for fall 1984. Particular consideration will be given to candidates with experience in the chronic health effects of trace levels of pollutants. Candidates should have a doctoral degree from a recognized toxicology program and should have the ability to establish an active research group in their specialty as well as to participate in multidisciplinary research projects. Interested applicants should send curriculum vitae to the following address no later than 15 December 1983.

Dr. Roy Jumper, Associate Dean
School of Public and Environmental Affairs
Indiana University
Bloomington, Ind. 47405

An Equal Opportunity/Affirmative Action Educator, Employer, and Contractor, M/F

GROUP LEADER, DNA SYNTHESIS—Major supplier to biotechnology industry seeks Ph.D. to lead development efforts in automated oligonucleotide synthesis. This leadership position requires thorough knowledge of current DNA-synthesis technology and supervisory skills. Position directly interacts with the management of instrument development, marketing, and manufacturing. Salary depends on experience. Relocation and benefits paid. *An Equal Opportunity Employer.* Reply to: **Box 280, SCIENCE**.

DIRECTOR
LAWRENCE HALL OF SCIENCE

The Lawrence Hall of Science of the University of California, Berkeley, invites applications for the position of director. The Hall is internationally recognized for development of innovative science education at all levels. Its well-established programs include educational research; curriculum development; public programs and exhibits; teacher in-service training; precollege courses in science, mathematics, and computer skills; and collaborative programs with schools to better prepare students for higher education. On-site public programs attract 250,000 visitors per year.

Applicants should show evidence of scholarly achievement and have a doctoral degree or equivalent experience. Administrative ability is essential—the director must be able to inspire and maintain a wide variety of activities at this vigorous science center. The director must work closely and easily with the public, schools, and community groups. Successful experience in working with governmental agencies, corporations, and foundations is desirable as well as extensive knowledge in a field of science, technology, or science education. Leadership of the science center requires long-range planning for the Hall's development; fund-raising to support these plans, and integration of the Hall's activities with the University's academic program.

Salary and other benefits will be commensurate with the responsibilities of the position and negotiated on the basis of experience.

Send letter of application, including brief statement of goals for the Hall, curriculum vitae, names of at least three references, and any supplemental information by 1 December 1983 to:

Chairman, Director's Search Committee
Lawrence Hall of Science
University of California
Berkeley, Calif. 94720

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



National Research
Council Canada

Conseil national
de recherches Canada

1984 RESEARCH ASSOCIATESHIPS

for research in science and engineering in the
laboratories of the NATIONAL RESEARCH COUNCIL OF CANADA.

The National Research Council is Canada's leading federal research organization. NRC's laboratory projects cover most areas of the physical sciences, life sciences and engineering.

Applicants for Research Associateships should have recently acquired a Ph.D. in the natural sciences or a Masters degree in an engineering field or expect to obtain the degree before taking up the Associateship.

Associateships are open to nationals of all countries although preference will be given to Canadians.

Research Associates will be offered appointments to the staff of the National Research Council on a term basis and will be offered salaries and benefits currently available to members of the continuing staff. As a guide, the current Ph.D. recruiting rate is \$28,914 per annum.

The initial appointment will normally be for a two-year term and may be renewed, subject to the Associate's performance and subject to the requirements of the Division.

Applications may be obtained from the Research Associates Office, National Research Council of Canada, Ottawa, Canada, K1A 0R6.

Closing date: 15 December 1983

Canada

POSTDOCTORAL RESEARCH APPOINTMENTS

The Life Sciences Division at The Los Alamos National Laboratory has postdoctoral positions available in the areas of membrane and protein chemistry, cyclic nucleotide biochemistry and enzymology, and neurochemistry. These positions offer excellent opportunities for interaction with outstanding molecular and theoretical biologists and biophysicists.

The Laboratory is operated by the University of California for the Department of Energy. Appointments are for one year, renewable for a second year and pay a stipend amount of \$26,220 to \$27,600 per annum (depending on research experience). We provide incoming travel, moving expenses and a full-range of employee benefits. Candidates no more than three years past their Ph.D. are invited to apply.

For information, call Mark Bitensky at (505) 667-2690.

To apply, please send **curriculum vitae**, statement of research interests, and the names of three references to:

Madeline Lucas
Personnel Services, DIV 83-BB
Los Alamos National Laboratory
Los Alamos, NM 87545

University of California

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

*An Affirmative Action/Equal Opportunity Employer:
Women, Minorities, Handicapped and Veterans
are urged to apply.*

SEARCH REOPENED DEAN SCIENCES AND HEALTH PROFESSIONS

Nominations and applications are invited for the position of Dean of the School of Sciences and Health Professions. This School includes the Departments of Biological Sciences, Chemical Sciences, Community Health Professions, Computer Science, Dental Hygiene and Dental Assisting, Geological Sciences, Mathematical Sciences, Nursing, Oceanography, Physics, and Psychology and programs in Environmental Health, Physical Therapy, and Medical Technology. The School offers several doctoral, 13 M.S., and 20 B.S. degree programs. The School also operates the Center for Marine Studies, the Applied Marine Research Laboratory, the Center for Applied Psychological Studies, the Barrier Islands Field Station, and the Great Dismal Swamp Field Station. The School has a faculty of over 200, an annual budget of \$7 million, and an additional \$2 million in external funding.

Candidates should have an earned doctorate and be working in one of the disciplines of the School, experience at the level of department chairman or equivalent, and a superior record of teaching and research. The position requires creative ability to provide leadership, particularly for research and graduate programs, in an emerging university. Candidates should demonstrate an ability to develop public support for the University.

Old Dominion University is located in Norfolk, Virginia, a metropolitan area of over one million population. Approximately 15,000 students are registered in on-campus credit courses. In addition, there is a strong commitment to off-campus credit work, to non-credit activities and to research and sponsored programs.

The position is available 1 January 1984 or as soon thereafter as possible. Applicants should submit résumés and names of at least three references by 15 November 1983 for full consideration. Please send application materials or nominations to:

Science Dean's Search Committee
Office of the Vice President for Academic Affairs
Old Dominion University
Norfolk, Va. 23508

An Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

National Wildflower Research Center (NWRC), Austin, Texas, seeks an **EXECUTIVE DIRECTOR** with doctorate in plant sciences or physiology. Extensive professional experience in administration, program and financial development, teaching, and public relations. Adjunct professorships in appropriate nearby universities available. Interim/sabbatical appointment will be considered. Applicants should send their curriculum vitae and three references to: **P. D. Taylor, Director of Development, Texas Tech University, P.O. Box 4650, Lubbock, Texas 79409.** NWRC is an Equal Opportunity Employer.

UNIVERSITY OF UTAH, Salt Lake City, Utah 84112, Professor E. M. Eyring, Chairman, Faculty Search Committee, Department of Chemistry, 126 HEB.

TENURE-TRACK FACULTY OPENINGS are available in chemistry. We seek applications from experimental physical chemists and inorganic chemists. Candidates are invited to submit a résumé, a statement of research plans, and three letters of recommendation. It will be desirable to have these materials available to our staff in late October; it will be necessary to have them by 30 November 1983. Applications postmarked or submitted after the closing date may be considered if no qualified candidates have applied by that date. *An Affirmative Action/Equal Opportunity Employer.*

Ponce School of Medicine has **THREE FACULTY POSITIONS** open in **PHYSIOLOGY**. Requirements include M.D., Ph.D., or equivalent, with a sound background in general physiology. Preference will be given to applicants with ability to teach cardiovascular, CNS, or cellular physiology to first-year medical students in an LCME-accredited school. Teaching may be done in English and/or Spanish. The department also requires faculty to share responsibility for the medical physiology course and to develop their own research program. Submit curriculum vitae and names of three references to: **Chairman, Department of Physiology, Ponce School of Medicine, Box 7004, Ponce, P.R. 00732.**

FACULTY POSITIONS IN CELLULAR, DEVELOPMENTAL, AND MOLECULAR BIOLOGY

The Worcester Polytechnic Institute (WPI) seeks to fill two tenure-track faculty positions (one at senior level). The successful candidates will actively participate in undergraduate and graduate teaching and will establish a funded research program. Preference will be given to candidates whose research interests fall within the areas of (i) gene structure and function and (ii) regulation of development of eukaryotes. Applicants should forward curriculum vitae, a concise statement of research, and three letters of recommendation to: **Search Committee, c/o Dr. J. C. Bagshaw, Department Head, Biology and Biotechnology Department, Worcester Polytechnic Institute, Worcester, Mass. 01609.** Applications will be accepted until 1 December 1983. *WPI is an Equal Opportunity/Affirmative Action Employer.*

MEMBRANE BIOCHEMIST

The Cystic Fibrosis Research Center and Department of Physiology and Biophysics, University of Alabama in Birmingham, offer a tenured or tenure-earning position (assistant to full professor) to an individual with demonstrated skills and productivity in the biochemistry of cell membranes. Experience with transport protein characterization, reconstitution, and/or isolation preferred. Send résumé and brief description of research interest by 15 November 1983 to: **R. A. Frizzell, Department of Physiology and Biophysics, University of Alabama in Birmingham, University Station, Birmingham, Ala. 35294.**

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

Applications are invited for a **MEMBRANE BIOCHEMIST/MOLECULAR BIOLOGIST**, experienced in receptors and protein purification, enzyme kinetics, transmethylation reactions, and biology of transmitters, to conduct fundamental research on membrane physiology. Knowledge of current literature is expected. Minimum term of contract is 2 years, with renewal expected if performance is satisfactory. Salary will be commensurate with experience and performance. Send curriculum vitae and names of three references to: **Membranes: Department of Basic and Clinical Immunology and Microbiology, Medical University of South Carolina (MUSC), 171 Ashley Avenue, Charleston, S.C. MUSC is an Equal Opportunity Employer.**

POSITIONS OPEN

FACULTY POSITIONS IN CELL BIOLOGY

Applications are invited for several tenure-track positions in the newly reorganized Department of Cell Biology and Anatomy at the Northwestern University Medical and Dental Schools. These positions are for assistant professors and, in exceptional cases, for associate professors. Applicants must have a Ph.D., M.D., or D.D.S. degree with research experience in cell biology, cellular neurobiology, structural biology, developmental biology, or related areas. Applicants should be able to demonstrate excellence or the potential for excellence in their respective fields. Successful applicants will be expected to carry on vigorous research programs and to participate in the teaching of graduate, medical, and dental students. Send complete curriculum vitae, brief description of previous and future research and teaching interests, and recommendations from at least three referees by 15 November 1983 to: **Dr. Robert D. Goldman, Chairman, Department of Cell Biology and Anatomy, Northwestern University Medical and Dental Schools, 303 East Chicago Avenue, Chicago, Illinois 60611.** Northwestern University is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.

FACULTY POSITION IN COMPUTER ENGINEERING Thayer School of Engineering Dartmouth College

A tenure-track position will be available beginning in September 1984. Applicants should have a doctorate in computer science and/or engineering, be prepared to teach at both the undergraduate and graduate levels, and develop a strong research program. Competence is desired in at least two of the following areas: digital systems architecture, networks and distributed processing, digital process control, computer hardware, microprocessors, and VLSI. Opportunities exist for collaboration with graduate Computer and Information Sciences Program, the Kiewit Computation Center, and the Mathematics and Computer Science Department.

Submit a résumé and arrange to have at least three reference letters and a graduate transcript sent directly to: **Professor John Strohbehn, Thayer School of Engineering, Dartmouth College, Hanover, N.H. 03755.** Closing date for applications is 1 February 1984. *Dartmouth College is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and members of minority groups.*

FACULTY POSITIONS IN MICROBIOLOGY AND MOLECULAR GENETICS

The Department of Microbiology and Molecular Genetics at the University of Cincinnati College of Medicine has been undergoing a major expansion and is currently searching for a molecular or cellular immunologist. Applications for tenure-track positions at any level are invited. Candidates should be involved in vigorous and creative research programs and should have demonstrated independence as an investigator. Applicants should submit curriculum vitae and a short statement of research accomplishments and direction for future research, along with the names of three scientists willing to write letters of recommendation. These should be forwarded to: **Dr. Jerry B. Lingrel, Chairman, Department of Microbiology and Molecular Genetics (524), University of Cincinnati College of Medicine, Cincinnati, Ohio 45267.** The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer.

DEPARTMENT HEAD—DEPARTMENT OF ANIMAL INDUSTRIES. The College of Agriculture and Natural Resources. The University of Connecticut invites applications for the position of professor and head of the Department of Animal Industries. Responsibilities involve the administration and coordination of Animal Science programs in teaching, research, and cooperative extension. Candidates should have a doctorate or equivalent in the animal science or closely related fields with an established record of achievement and experience. Experience should include significant accomplishment in teaching, research, and/or cooperative extension. Applicants must provide evidence of administrative leadership and the ability to work with and assist in the professional growth of faculty. Candidates should send résumé by 1 December 1983, including names, addresses, and telephone numbers of three references to: **Associate Dean John P. H. Brand, Search Committee Chairman, THE UNIVERSITY OF CONNECTICUT, Box-U-90, Storrs, Conn. 06268.** An Equal Opportunity/Affirmative Action Employer (SEARCH 3A11).

POSITIONS OPEN

FACULTY POSITION IN PHARMACEUTICS

College of Pharmacy University of Nebraska Medical Center

Applications are invited for a tenure-track faculty position as assistant professor in the Department of Pharmaceutics in the College of Pharmacy which will be available 1 July 1984. Applicants must have a Ph.D. degree with a major or training in pharmaceutics, biopharmaceutics, and/or pharmacokinetics. Preference will be given to applicants with academic and research experience in innovative drug delivery systems. An undergraduate degree in pharmacy is desirable.

The successful candidate will assume teaching responsibilities in the professional degree (Pharm.D.) curriculum and graduate program and be expected to conduct and direct research that can be supported by extramural funding.

Applicants should submit current curriculum vitae, three letters of reference, and a summary of their research and teaching interests in confidence to:

**Clarence T. Ueda, Pharm.D., Ph.D.
Department of Pharmaceutics
College of Pharmacy
University of Nebraska Medical Center
42nd and Dewey Avenue
Omaha, Nebraska 68105**

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

HEAD—DEPARTMENT OF BIOLOGY. Position will be filled at the rank of associate professor, or higher, with a one-half time teaching obligation. Preferred area of expertise is **HUMAN PHYSIOLOGY**. Requirements include history of effective teaching and research; administrative experience desirable. Candidate selected will assume duties in July 1984. Submit curriculum vitae and arrange for three letters of recommendation to be sent directly from reference. Applications accepted until 1 November 1983. Apply to: **Robert J. Werth Ph.D., Chairman—Search Committee, Department of Biology, Purdue University Calumet, Hammond, Indiana 46323.**

Affirmative Action/Equal Opportunity Employer

IMMUNOLOGIST/IMMUNOCHEMIST

An assistant or associate professor, tenure-track faculty position will be available 1 July 1984 in the Department of Biomedical Chemistry, College of Pharmacy, University of Nebraska Medical Center. We are seeking an immunologist with a strong background in biochemistry. Postdoctoral experience is desirable. Competence in the following procedures is required: ELISA, RIA, RID, hybridoma and monoclonal antibody production, protein purification, antibody purification, and animal handling. The successful candidate is expected to pursue an active research program, head an immunology interest group, and participate in teaching courses in immunotherapy and biochemistry. Opportunities for interdisciplinary research exist. Send résumé, three letters of reference, and an outline of research plans or abstracts of currently funded grants to: **Dr. Sidney J. Stohs, Professor and Chairman, Department of Biomedical Chemistry, University of Nebraska Medical Center, Omaha, Neb. 68105.** An Equal Opportunity/Affirmative Action Employer.

PHARMACOLOGY, ASSISTANT PROFESSORS:

The Department of Pharmacology and the Cancer Center at the University of Rochester invite applications for two tenure-track faculty positions at the rank of assistant professor. Individuals appointed to these positions will hold joint primary appointments in the Department of Pharmacology and in the Cancer Center. Applicants should have a Ph.D. in pharmacology or a related field, an M.D., or both, postdoctoral research training, the potential to attract research support and to establish an independent research program, and an interest in professional and graduate training. Individuals with research interests in the areas of cancer chemotherapy, immunology, cellular regulatory mechanisms, receptor-mediated mechanisms, or mechanisms of tumor induction and who apply the techniques of modern biochemistry and molecular biology to pharmacological investigations are sought in particular. Applicants should forward curriculum vitae, a list of publications, three letters of reference, and a summary of current and future research interests to: **Search Committee, Department of Pharmacology, School of Medicine and Dentistry, 601 Elmwood Avenue, Rochester, N.Y. 14642.** The deadline for applications is 1 December 1983. *Equal Opportunity Employer, M/F.*

PHARMACOLOGY RESEARCH

The Ohio Medical Anesthetics Division of The BOC Group, an international leader in anesthesia-related drugs, is seeking Ph.D.s to staff the research facility at its Murray Hill, N.J., location. Positions are available in the following areas:

- **GENERAL C&S:** assessment of potential i.v. anesthetic and muscle relaxant candidates, as well as broad-based behavioral screens.
- **ANALGESIA:** *in vivo* and *in vitro* screening of centrally acting analgesics and related side-effects.
- **CARDIO-PULMONARY:** cardiovascular safety, hemodynamic elevation, blood gas analysis and inhalation anesthesia models.
- **BIOCHEMISTRY:** Uptake and binding studies, enzymic assays and histamine metabolism.

Qualified applicants must have industrial or extensive postdoctoral experience as well as excellent written and verbal communication skills.

Send resume including employment history and salary requirements to: Employee Relations Manager

The BOC Group, Inc. Technical Center

100 Mountain Ave., Murray Hill, NJ 07974

An equal opportunity employer

PROGRAM MANAGER VACANCIES

BASIC RESEARCH IN ELECTRONICS OR MATERIALS ENGINEERING

The Air Force Office of Scientific Research, Air Force Systems Command, located in Washington DC, invites applications from qualified U.S. citizens with a background in university and industrial research. The Program Manager plans and manages a contract research program conducted primarily at universities and industrial laboratories. The positions are career civil service GM-13 (\$34,930-\$45,406 per year) or GM-14 (\$41,277-\$53,661 per year) depending on qualifications.

#600-83—Electronics Engineer. Manages a program of research in electronic information processing, including optical computation, image transmission and the physics of related electronic and optical materials, devices and circuits. It is desired that the incumbent possess a PhD in Electrical Engineering or the equivalent. Demonstrated competence in technical program management is essential. Include vacancy announcement #600-83 on your application if applying for this position.

#601-83—Materials Engineer. Manages a program of research in ceramic materials and coatings and related structural materials science areas, such as metallurgy, metal-ceramics and composite materials. It is desired that the incumbent possess a PhD in Ceramic or Materials Science or the equivalent. Demonstrated competence in technical program management is essential. Include vacancy announcement #601-83 on your application if applying for this position.

No prior Government service is required for these positions. Send Office of Personnel Management Standard Form 171, "Personal Qualifications Statement" and list of publications to:

Civilian Personnel Office
1776 ABW/DPCA-83-F
Attn: Ms. Hittinger
Andrews AFB, MD 20331

Applications must be received by 21 October, 1983.

AN EQUAL OPPORTUNITY EMPLOYER

Brookhaven National Laboratory

Associate Director for Applied Programs

The Associate Director reports to the Director, and has oversight responsibility for the research and development efforts of the Department of Nuclear Energy and the Department of Applied Science. Candidates should have a Ph.D. or equivalent with a distinguished record in scientific research and development, and be experienced in managing large groups of scientists and engineers. Also valuable would be experience in dealing with granting agencies such as the U.S. Department of Energy and the Nuclear Regulatory Commission, and national laboratory or industrial experience as a manager of research and development. Search Committee Chairman: Dr. J. Hudis, Building 460.

Associate Director for Life Sciences

The Associate Director reports to the Director, and has oversight responsibility for the research efforts of the Biology Department and the Medical Department. Candidates should have an M.D. or a Ph.D. with a distinguished record in scientific research and development, and be experienced in administering large groups of basic and applied researchers. Also valuable would be experience in dealing with granting agencies such as the U.S. Department of Energy, the National Institutes of Health, and the Environmental Protection Agency. Search Committee Chairman: Dr. R. B. Setlow, Building 463.

Brookhaven National Laboratory is a multi-program laboratory managed by Associated Universities, Inc., under contract with the U.S. Department of Energy. Current employees number over 3000, of whom 20% are assigned to the Nuclear Energy and Applied Science Departments, and 10% to the Biology and Medical Departments. In addition, Brookhaven serves as host to several hundred scientific visitors who come in the course of the year to collaborate with the resident staff, or to use the specialized research facilities that are operated at the Laboratory.

The successful candidates will join the Laboratory management team that includes three other Associate Directors for scientific programs. Applications and nominations should be sent, by **October 31, 1983**, to the above named individuals. Applications should include a curriculum vitae and the names of five references.



Brookhaven National Laboratory
Associated Universities Inc.

Upton, N.Y. 11973

An Equal Opportunity Employer m/f

POSITIONS OPEN

MOLECULAR GENETICS/MICROBIOLOGY assistant professor. Tenure-track position available fall 1984. Ph.D. required. Primary responsibilities will be teaching undergraduate and graduate courses in genetics, microbiology, and introductory courses, and advising students. Send curriculum vitae, statement of teaching experience, official transcripts, and three current letters of reference by 31 December 1983 to: **E. Bruce McLean, Chairman, Department of Biology, John Carroll University, Cleveland, Ohio 44118.** An Equal Opportunity Employer.

MOLECULAR VIROLOGIST

A tenure-track position is open in the **DEPARTMENT OF MICROBIOLOGY, UNIVERSITY OF NOTRE DAME**, at the assistant professor level beginning 1 September 1984. We seek an outstanding individual to conduct an active research program in **VIROLOGY**, at the **MOLECULAR** level. Responsibilities include the direction of graduate students and the presentation of our advanced undergraduate and one graduate course in virology. Applicants should have postdoctoral experience and strong prospects for funding. We offer the successful candidate adequate seed money, a modern research laboratory (including germfree animal facilities), a competitive salary, and colleagues with complementary research interests.

Submit curriculum vitae, a summary of research interests, and the names of three references by 15 January 1984 to:

Dr. Morton S. Fuchs
Department of Microbiology
University of Notre Dame
Notre Dame, Indiana 46556

This University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available immediately for studies of the neural control of eye movement using chronic unit recording, microstimulation, and anatomical and behavioral techniques. Send curriculum vitae and three letters of reference to: **David L. Sparks, Ph.D., Department of Physiology and Biophysics, University of Alabama in Birmingham, Birmingham, Ala. 35294.** An Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

IMMUNOLOGIST

M.D./Ph.D. (or equivalent) with experience of five or more years in human transplantation genetics and human immunology with particular emphasis on serological and cellular tissue typing and on biochemical and biophysical characterization of xenobiotic and allo-antibodies directed against human cell surface antigens as well as their respective targets. Demonstrated experience in mouse and human somatic cell hybrid technology and in establishing cell lines in vitro and selecting their enzymatic mutants. Salary range: \$25,000 to \$31,000. Please forward curriculum vitae to:

Susan Sczechowicz
The Wistar Institute
36th and Spruce Streets
Philadelphia, Pa. 19104

MARINE BIOCHEMIST

A tenure-track position (assistant professor to professor) is available immediately in the Division of Biology and Living Resources for a biochemist who is interested in working in aspects of biological oceanography. Demonstrated (or the potential for) excellence in research and teaching is a prime criterion for appointment.

Applications should be submitted no later than 15 December 1983 to:

Dr. Peter Lutz, Acting Chairman
Division of Biology and Living Resources
Rosenstiel School of Marine and Atmospheric Science
University of Miami
4600 Rickenbacker Causeway
Miami, Florida 33149

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

MICROBIAL GENETICS POSITION. A tenure-track microbial genetics position will be available 1 September 1984. An earned doctorate in area of microbiology and/or genetics is required. Responsibilities include teaching microbial genetics, microbiology, and introductory biology. Other teaching areas might include genetics and/or molecular biology depending on the applicant's qualifications. The successful candidate will be expected to develop a strong research program in area of expertise. Undergraduate and graduate transcripts, three letters of recommendation, and reprints, along with other evidences of scholarly productivity are required. Please submit curriculum vitae no later than 1 January 1984 to: **Dr. George W. Welker, Chairman, Department of Biology, Ball State University, Muncie, Ind. 47306.** Ball State University practices Equal Opportunity in Education and Employment.

ERINDALE COLLEGE UNIVERSITY OF TORONTO DEPARTMENT OF BIOLOGY POSITION IN MICROBIOLOGY

The Department of Botany at the University of Toronto invites applications for a tenure-track position at the rank of assistant professor, tenable from 1 January 1984 at the Erindale Campus. A Ph.D. in microbiology or a related area is required. The successful candidate is expected to teach parts of undergraduate courses in cell biology, protists, and microbiology and to participate in the graduate program. The successful candidate is also expected to develop an active research programme utilizing our monoclonal antibody facilities. Preference will be given to individuals with postdoctoral and teaching experience. Curriculum vitae and three letters of reference should be sent to: **Professor P. A. Horgen, Associate Chairman, Department of Botany, University of Toronto, Erindale Campus, Mississauga, Ontario, Canada L5L 1C6.** Deadline for receipt of applications is 31 October 1983.

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

POSTDOCTORAL POSITION available for research on *Drosophila* ribosomal proteins. Previous training in molecular biology of nucleic acids essential. Applicants with experience in DNA sequencing, DNA cloning, restriction enzyme mapping, and filter blot hybridization preferred. Send curriculum vitae and names of three references to: **Dr. Yean Chooi, Department of Biology, Indiana University, Bloomington, Ind. 47405.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

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

POSTDOCTORAL ASSOCIATE—Biochemist is sought, preferably with interest in enzymology and chemical modification of proteins. The 2-year position, with possibility for renewal, is available immediately at an annual salary of \$18,500. A complete application requires résumé, transcripts, and three letters of reference sent to: **Dr. Fred C. Hartman, University of Tennessee—Oak Ridge Graduate School of Biomedical Sciences, P.O. Box Y, Oak Ridge, Tennessee 37830.**

An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL ASSOCIATE available immediately; screening will begin immediately. Position will collaborate on an NIA/NIH grant studying age-related changes in oral mucosa and skin. Requires Ph.D. and a background in biochemical metabolism with experience in the use of radioactive isotopes, determination of rates of protein synthesis, extraction and identification of lipids using thin-layer chromatography and assay to determine binding affinity. Experience in tissue culture helpful but not necessary. Salary will be consistent with NIH postdoctoral salary scale. Send curriculum vitae, official transcripts, and names of two referees to: **Dr. Murray Hill, Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, Iowa 52242.** The University of Iowa is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION available immediately to study mechanism of insulin action, particularly sites of fat cell phosphoprotein phosphorylation. Applicant should be trained in protein chemistry and interested in hormone physiology. Salary range: \$16,000 to \$17,000. Send résumé and names of three references to: **Dr. W. B. Benjamin, Department of Physiology, School of Medicine, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, New York 11794.** SUNY, Stony Brook, is an Equal Opportunity/Affirmative Action Employer. AK 716.

POSTDOCTORAL POSITION available to investigate hormonal regulation of normal and abnormal craniofacial development. Studies include examination of interactions between prostaglandins, catecholamines, cAMP, and extracellular matrix in the formation of cleft palate. Large group of active teratologists available for collaboration. Send curriculum vitae to: **Dr. Robert M. Greene, Department of Anatomy, Thomas Jefferson University, Philadelphia, Pa. 19107.**

POSTDOCTORAL POSITION. Research in biosynthesis of terpenoids with emphasis on enzymology and bioorganic chemistry. Available immediately. Salary commensurate with background and experience. Send résumé with names and addresses of three references to: **Rodney Croteau, Washington State University, Pullman, Wash. 99164-6340.** Washington State University is an Equal Opportunity/Affirmative Action Employer.

YALE UNIVERSITY SCHOOL OF MEDICINE POSTDOCTORAL TRAINEE

Position available immediately to investigate the hormonal regulation of melanoma growth and pigmentation. Research employs a variety of genetic and biochemical techniques with cultured melanoma cells. Emphasis placed on structure and function of receptors for MSH in mutant and wild-type cell lines.

Position is for 1 to 4 years, funded by the NIH. Send curriculum vitae and three letters of reference to: **Dr. John Pawelek, Department of Dermatology, Yale University School of Medicine, New Haven, Connecticut 06510.** An Equal Opportunity/Affirmative Action Employer.

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NADC

RESEARCH OPPORTUNITIES

Competitive visiting scholar awards for one or two years' tenure in selected federal laboratories throughout the United States. Opportunities are available for specialized experimental or theoretical research experience—free of interruptions and distractions of other duties—in the general fields of:

**ATMOSPHERIC AND EARTH SCIENCES
ENGINEERING • LIFE AND MEDICAL
SCIENCES • PHYSICS • CHEMISTRY
ENVIRONMENTAL SCIENCES
MATHEMATICS • SPACE SCIENCES**

Most of the 19 programs are open to U.S. and non-U.S. nationals, and most are open to experienced senior investigators as well as to recent Ph.Ds.

Application materials with details on research opportunities and laboratory locations may be requested by letter, stating the specific area of research interest, to:

Associateship Programs (JH 608-S2)
NATIONAL RESEARCH COUNCIL
2101 Constitution Avenue
Washington, D.C. 20418

National Academy of Sciences
National Academy of Engineering • Institute of Medicine

Creative Molecular Biologist

Stauffer Chemical Company has an immediate opening in its expanding Molecular Biology Section, located in the San Francisco Bay Area.

Candidates should have a PhD in Molecular Biology, extensive experience in prokaryotic genetic engineering and a significant record of accomplishments in gene cloning, gene expression, bacterial genetics and applied immunology. Interest and experience in Microbial Insecticides are desirable. The individual who fills this position will lead an ongoing research project and will be responsible for designing and implementing new programs of commercial significance.

Qualified applicants are invited to send a resume containing the names and addresses of three (3) references to: K.D. McLaren, Stauffer Chemical Company, 1200 South 47th St., Richmond, CA 94804. We are an affirmative action employer.



J. ROBERT OPPENHEIMER RESEARCH FELLOWSHIPS

Los Alamos National Laboratory announces the competition for the J. Robert Oppenheimer Postdoctoral Fellowships. The appointments are designed to foster continuing contacts between the Laboratory and recent recipients of doctoral degrees who show clear and definite promise of becoming outstanding leaders in scientific research areas.

Appointments are considered in many areas of experimental and theoretical physics, chemistry, mathematics, computer science, biology, materials science, environmental health, geoscience, and engineering.

Candidates may be persons completing their doctoral work or finishing a current postdoctoral appointment, as well as junior faculty members seeking support for a period of concentrated research.

Appointments are for two years, with the possibility of renewal for a third year. We provide a stipend of \$39,480 per year (12 months). Fringe benefits are also provided including incoming travel and moving expenses.

Applications submitted for this fellowship are referred to appropriate technical groups for review. Particularly outstanding candidates are selected for sponsorship by Laboratory Staff Members. A detailed research proposal reflecting the candidates' creativity, interest, and abilities is developed in consultation with the sponsor. Final selection is determined in a Laboratory-wide competition based on the proposed research project, in addition to, previous academic and research excellence.

To insure timely consideration a resume or employment application (usually available from Placement Office) and a statement of research interest and goals should be submitted by mid-December to:

Madeline Lucas
J. Robert Oppenheimer Program
MS P-280, DIV 83-AC
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

University of California

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

An Affirmative Action/Equal Opportunity Employer:
Women, Minorities, Handicapped and Veterans are urged to apply.



Public Service Commission
of Canada

Commission de la Fonction
publique du Canada

Research Scientist, Methodology

**Energy, Mines and Resources Canada
Canada Centre for Remote Sensing
Ottawa, Ontario**

We require a mature scientist who is seeking a challenging and rewarding career in the Public Service. You will conduct a research program on the approaches to pattern recognition and artificial intelligence problems as encountered in the interpretation of remote multispectral sensing data. We will be relying on you to carry out research and development on new methods of mathematical analysis with a view to improving the process of interpretation. You will also assess and advise on research programs related to interpretation of remotely-sensed data.

You require graduation from a recognized university with a doctorate degree in physics, engineering physics, geophysics, astronomy, applied mathematics or statistics or a lesser degree with research experience and scientific productivity equivalent to that of a doctorate degree. In addition, experience is required in carrying out original research related to remote sensing and digital analysis. This should include the analysis and interpretation of digital data, statistical analysis of results, specification of the appropriate sampling in data collection and analysis of the basic interactions between electromagnetic radiation and the earth's surface and atmosphere. Knowledge of either English or French is essential.

We offer a salary ranging from 26 834 \$ to 49 913 \$.

Forward your résumé, quoting reference number 83-NCRSO-EMR-5 (2138), to:
Joan Girling (613) 593-5331
Public Service Commission of Canada
Ottawa, Ontario K1A 0M7

Please apply before 28 October 1983.

Tout renseignement est disponible en français en s'adressant à la personne ci-haut mentionnée.

The Public Service of Canada
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BIOCHEMISTRY

Biotechnology firm is seeking a few outstanding research scientists.

B.S./M.S./Ph.D.

IMMUNOCHEMISTS. Successful candidates will have a proven track record of industrial development of homogenous enzyme immunoassay test kits. Ph.D. Salary range of \$35-50K.

MOLECULAR BIOLOGISTS. Successful candidates will have proven expertise in nucleic acid replication, enzymology, and recombinant DNA technology. Ph.D. Salary range of \$32-50K.

Microgenics offers a scientific challenge and equity participation with competitive salaries and fringe benefits. For immediate consideration, forward your resume in strict confidence to:

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MICROGENICS

VICE PRESIDENT - WORLDWIDE FOOD REGULATORY AFFAIRS

A young, rapidly expanding food products group of an internationally recognized Fortune 500 corporation in the United States is seeking an individual to assume responsibility for regulatory affairs activities on a worldwide basis.

Our client is seeking an individual with formal education in chemistry, food science/technology, or an appropriate biological science (Ph.D. preferred) and substantial experience in regulatory affairs related to foods, food products, food additives or confections. Such experience can be a combination of domestic and international, but a significant portion must be in the international area. A key immediate objective is the expansion of international registrations for a major new product that is singularly successful in the U.S. and several overseas countries.

The successful candidate should have an excellent understanding of international food regulatory affairs, as well as a solid background in science, and be an articulate, resourceful individual.

This highly important position offers the right individual the opportunity to organize the function in the group, to grow with the most rapidly growing segment of the corporation, and to demonstrate his or her organizational and technical skills. The position provides unusually high visibility at the group and corporate level.

Our client will offer an outstanding compensation package, including base salary, executive bonus, and stock options, as well as comprehensive benefits and an excellent relocation program to the successful candidate.

All fees are paid by our corporate client. Please send your curriculum vitae and detailed qualifying letter in confidence to: Robert J. Hodges, Ph.D., Senior Vice President.



**SAMPSON, NEILL
& WILKINS INC**

First In Executive Search For The Health Industries

543 Valley Rd., Upper Montclair, N.J. 07043 (201) 783-9600

POSITIONS OPEN

POSTDOCTORAL FELLOW to study in vivo and in vitro cellular immune responses utilizing available monoclonal antibodies and both cytotoxic and helper T cell clones specific for a virus used as a murine model for multiple sclerosis. Candidate should have a relevant Ph.D. Send curriculum vitae to: **Stephen A. Stohlman, Ph.D., Department of Neurology and Microbiology, MCH 142, University of Southern California, School of Medicine, 2025 Zonal Avenue, Los Angeles, Calif. 90033. Equal Opportunity Employer, M/F/H.**

POSTDOCTORAL FELLOW to study the regulation of RNA synthesis and metabolism in prokaryotic and eukaryotic cells, with particular emphasis on enzymology of RNA processing. Must have knowledge of or experience in nucleic acid enzymology, bacterial or eukaryotic genetics, and DNA recombinant technology. Three years of experience and Ph.D. in biochemistry required; \$18,000 per year. Send résumé to: **Connecticut State Job Service, Technical Unit, Connecticut Department of Labor, Wethersfield, Conn. Refer to Job Order Number 310268.**

POSTDOCTORAL POSITION, available in spring 1984, to study biochemistry and genetics of cyclic AMP metabolism and hormone action, using mutant cells (mouse lymphoma and yeast) and a human genetic disease of adenylate cyclase, pseudohypoparathyroidism. Goals include purifying and characterizing protein components of adenylate cyclase and cyclic nucleotide phosphodiesterase in vertebrate and yeast cells, as well as homologous proteins of retinal rod outer segments, and isolating and characterizing the genes that encode these proteins. Candidates should have an interest in molecular mechanisms of hormone action and expertise in yeast genetics, recombinant DNA technology, and/or biochemistry of membrane proteins. Salary at or above NIH stipend level, commensurate with past experience. Send letter describing interests, plus curriculum vitae and names and addresses of three referees, to: **Henry R. Bourne, M.D., 1210 Medical Sciences Building, University of California, San Francisco, San Francisco, Calif. 94142. The University of California is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.**

Several **POSTDOCTORAL POSITIONS** available during 1983/1984 in the **Developmental Biology Center, University of California, Irvine, California 92717.** Recent Ph.D. required, preferably in cell, molecular, or developmental biology; neurobiology or genetics. Positions are for research with Dr. Ron Meyer (development of optic nerve connections); Dr. Scott Fraser (developmental neurobiology; cell communication); and Dr. Susan Bryant (limb development and regeneration in amphibians and mammals). *The University of California is an Equal Opportunity/Affirmative Action Employer.* For more information, contact the individuals above, or to apply, submit résumé and brief description of research interests and experience, together with names of three individuals qualified to evaluate your work, to: **Director, Developmental Biology Center** (address above).

POSTDOCTORAL POSITION available 1 November 1983 for microbiologists/biochemists to study nitrogenase in photosynthetic green sulfur bacteria. Candidates must have good knowledge of protein purification techniques; previous experience in the enzymology of anaerobes or in vitro studies of nitrogenase helpful. Applicants should send curriculum vitae and the names of three references to: **Dr. Michael Madigan, Department of Microbiology, Southern Illinois University, Carbondale, Ill. 62901. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS: Investigation of human and mouse oncogenes and their expression in genetically distinct human population groups and chemically induced mouse tumors. Available fall and winter. Send résumé and other information to: **Dr. Leonard H. Augenlicht, Department of Oncology, Montefiore Medical Center, 111 East 210 Street, Bronx, New York 10467.**

POSTDOCTORAL POSITIONS open in multidisciplinary Cancer Research Program. NIH fellowships now available for recent Ph.D. or M.D. to study immunology, biochemistry, experimental therapeutics, or molecular biology at the University of California, San Diego (UCSD). Positions are restricted to U.S. citizens and permanent residents. For further information concerning participating faculty and program, send curriculum vitae and statement of interests to: **Dorothy Hudig, Ph.D., Associate Director, Oncology Training Grant, UCSD Cancer Center T-011, UCSD, La Jolla, Calif. 92093.**

SEEKING APPLICATIONS FOR

The University of Akron Biomedical Engineering Director

Position available for individual with Ph.D. and/or M.D. who has at least one engineering degree. Position offers challenge and opportunity to expand biomedical engineering research program involving the University, area hospitals and the medical school. It is desirable that applicants have experience in biomedical engineering research and teaching.

The University of Akron, the third largest state university in Ohio, is located within a culturally rich region of concentrated industrial and research activities as well as outstanding health care facilities.

Salary is competitive, fringe benefits are outstanding and housing is attractively priced.

Send resume and names of three references by November 15, 1983 (February 15, 1984, if not filled sooner), to: Dean Louis A. Hill, Jr., College of Engineering, The University of Akron, Akron, OH 44325.

All materials, including letters from references, transcripts, etc., will be considered for the position available as early as January 1984.



The University of Akron is an Equal Education and Employment Institution

CHIEF, IMMUNOBIOLOGY AND IMMUNOCHEMISTRY BRANCH IMMUNOLOGY, ALLERGIC AND IMMUNOLOGIC DISEASES PROGRAM

Salary range:

\$48,553-\$63,115—General Schedule Pay Scale.

\$51,353-\$65,357—Medical Officer Pay Scale.

In addition, applicant may be eligible for Physicians
Comparability Allowance up to \$10,000.

Description:

This position is concerned with NIAID Extramural Activities of the Immunology, Allergic and Immunologic Diseases Program. The Chief of the Immunobiology and Immunochemistry Branch plans and conducts the NIAID's research grants, training grants, fellowships, career awards and research resources programs in the area of basic immunology. He/she is responsible for coordinating the various support programs, develops priorities within the scientific program area of immunobiology and immunochemistry, and develops and maintains liaison with appropriate departments of universities, other institutions, other components of the NIH and DHHS, advisory bodies and other relevant scientific organizations.

Qualifications and requirements for the position:

Applicant must possess a doctorate degree in medical science (M.D.) or degree in the biological sciences (Ph.D., D.V.M., D.D.S., D.O.) with substantial experience in research and administrative capabilities or equivalent experience; must also have extensive and current background knowledge in immunology.

Person to be contacted for further information:

Sheldon G. Cohen, M.D. (301-496-1884), Director
Immunology, Allergic and Immunologic Diseases Program

Applications should be sent to:

NIAID Personnel Office, Attention: Jane Schriver
9000 Rockville Pike, Building 31, Room 7A31, Bethesda, MD 20205

**National Institutes of Health
National Institute of Allergy and Infectious Diseases**

NIH is an Equal Opportunity Employer.

Faculty Positions

The Department of Microbiology at the Mount Sinai School of Medicine invites applications for faculty positions in each of the following disciplines:

- A) MOLECULAR/MICROBIAL GENETICS
- B) IMMUNOLOGY: MOLECULAR OR CELLULAR
- C) ANIMAL VIROLOGY

Appointment is possible at all ranks depending upon qualifications and experience. These positions offer exceptional opportunities to conduct original research in an environment of active research and teaching located in a modern facility on Manhattan's upper East Side. Those interested should submit curriculum vitae, a list of publications, a summary of current research interests, and names of three references who may be contacted to: Search Committee Chairman, Department of Microbiology, One Gustave L. Levy Place, New York, NY 10029.

Application deadline is December 1, 1983.

An Equal Opportunity Employer.



**The Mount Sinai
School of Medicine**

Vice-President (Academic & Research)

Applications and nominations are invited for the position of Vice-President (Academic & Research), Dalhousie University. The University has more than 9,500 full- and part-time students, and 1,200 full- and part-time academic staff in Faculties of Arts and Science, Administrative Studies, Health Professions, Law, Medicine, Dentistry, and Graduate Studies.

The Vice-President (Academic & Research) is the senior Vice-President, responsible to the President, and works with senior University officers and the Deans of Faculties in administration of academic and research policies of the University. Candidates should be established scholars with qualifications appropriate for senior faculty appointment, and suitable experience in administration.

The appointment is normally for a term of five years and would commence 1 July 1984, or at a mutually agreed time. Applications should include biographical information and the names of three referees. Applications and nominations should be submitted by 15 November 1983 to: The Secretary, Vice-President's Search Committee, c/o Office of the President, Dalhousie University, Halifax, Nova Scotia, B3H 4H6.

Dalhousie University is an equal opportunity employer.

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



Dalhousie University
Serving Atlantic Canada

POSTDOCTORAL POSITION available immediately at the California Institute of Technology for research on the mechanism of phospholipid vesicle recognition and uptake by phagocytic cells. Ph.D. in biochemistry, biology, or related disciplines required. Fellowship restricted to U.S. citizens or permanent residents. Applicants should send their résumé and three letters of recommendation to:

Dr. John D. Baldeschwieler
Division of Chemistry and Chemical Engineering
California Institute of Technology
Pasadena, California 91125
Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITIONS (TWO) available for biochemists and/or geneticists interested in (i) using antibodies to isolate and characterize mRNA of the GTP-binding regulatory protein (N) of adenylate cyclase and (ii) cloning and analysis of the genes encoding the N protein. Send curriculum vitae and letters of references to: **Dr. Bernard K. Fung, Department of Radiation Biology and Biophysics, University of Rochester, Rochester, N.Y. 14642. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION—Plant molecular genetics. Position is available immediately to work on transposable elements and transformation in maize. Research experience in molecular biology required. Salary starts at \$16,000; support funded for 2 to 3 years. Send curriculum vitae and names of three references to: **Dr. Jeff Bennetzen, Department of Biological Sciences, Purdue University, West Lafayette, Ind. 47907. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available immediately for recent Ph.D. to study the cardiovascular effects of parathyroid hormone. Experience with vasoactive peptides and/or techniques for assessing blood vessel function in vitro and in vivo are desirable. Send letter, curriculum vitae, and names of references to: **Dr. M. F. Crass, III, Department of Physiology, School of Medicine, Texas Tech University Health Sciences Center, Lubbock, Texas 79430. An Equal Opportunity/Affirmative Action Employer**

POSTDOCTORAL POSITION FOR NEUROBIOLOGIST to study the development and plasticity of the mammalian visual and somatosensory systems. Candidates with backgrounds in electron microscopy, light microscopy, or neurophysiology will be considered. Send curriculum vitae, names of three references, and availability date to: **Professor Douglas Frost, Section of Neuroanatomy, Yale Medical School, 333 Cedar Street, New Haven, Conn. 06511.**

POSTDOCTORAL POSITION IN PROTEIN FOLDING is available now to study intermediates and kinetics of protein folding using Raman spectroscopy. A background in protein structure studies is desired. Salary: \$15,000 to \$17,000. Send curriculum vitae, description of research experience and names of three references to: **Personnel Department, Dr. Robert Williams, Biochemistry Department, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20814. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE position available for the study of control of plasmid replication in yeast. Experience in modern molecular genetic techniques required. Send résumé and three letters of recommendation to: **Dr. J. Broach, Department of Microbiology, State University of New York (SUNY) Stony Brook, Stony Brook, New York 11794. SUNY Stony Brook is an Equal Opportunity/Affirmative Action Employer. AK 722.**

POSTDOCTORAL RESEARCH ASSOCIATE

Position immediately available for the candidate with Ph.D. in pharmacology. A training in the physiological and pharmacological aspects of drug action on the autonomic nervous system is required. Laboratory skills in analytical instrumentation, kinetics and receptor pharmacology are preferred. The candidate will investigate the steric structure activity relationship for the activation of adrenoreceptors and related processes by the catecholimidazolines. Send résumé to: **Popat N. Patil, Ph.D., College of Pharmacy, 500 West 12 Avenue, Lloyd M. Parks Hall, Columbus, Ohio 43210.**

PULMONARY PHYSICIAN

We are seeking an academic pulmonary physician with established research ability in cellular physiology. Clinical responsibility will be to share in teaching and administration of pulmonary function laboratory. Excellent salary and fringe benefits. Please send curriculum vitae to: **Harry Steinberg, M.D., Chief, Pulmonary Medicine, LONG ISLAND JEWISH-HILLSIDE MEDICAL CENTER, New Hyde Park, N.Y. 11042. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION available for the experimental study of the entrainment, deposition, and transport of sediments in lakes and oceans. The research will be primarily in the laboratory but will also involve some fieldwork. Competence in experimental fluid mechanics and interest in environmental problems is necessary. The position will remain open until filled. Applicants should send résumé and names of three references to:

Professor Wilbert Lick
Department of Mechanical and
Environmental Engineering
University of California
Santa Barbara, Calif. 93106

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION available 1 December 1983 in biochemistry and molecular biology for the study of phospholipid transfer proteins in mammalian tissues. Project will involve isolation, structural analysis, and regulation of these proteins. Characterization at the genetic level is also anticipated. Some background in recombinant DNA techniques is desirable. Send curriculum vitae and names and telephone numbers of three references to: **Dr. G. M. Helmkamp, Jr., Department of Biochemistry, University of Kansas Medical Center, Kansas City, Kans. 66103. An Equal Opportunity/Affirmative Action Institution.**

QUANTITATIVE ECOLOGIST

Battelle, Pacific Northwest Laboratories at Richland, Washington, invites applications from scientists capable of conducting innovative, basic and applied research in areas of quantitative methodology and ecological sampling.

Position requires a working knowledge of data analysis, simulation modeling, statistical consulting and ecology sampling theory and methods. Ph.D. or equivalent experience, training in quantitative sciences, specifically experience in terrestrial and aquatic ecology and statistical computing. Must be willing to participate in interdisciplinary research teams, have experience in oral presentations and in writing research proposals and reports. Familiarity with research projects management desirable.

Please submit résumé, transcript, and references to: **Loren P. Henderson, Manager-Employment, Battelle-Northwest, P.O. Box 999, Richland, Wash. 99352. U.S. citizenship required.**

An Equal Opportunity Employer, M/F

RESEARCH ASSOCIATE. Position available immediately for Ph.D. biochemist with several years of experience in viral/chemical carcinogenesis, molecular cloning, in vitro mutagenesis and gene regulation. Candidate must have expertise in retroviruses and experience in nucleic acid biochemistry. Send résumé to: **Dr. S. Rasheed, University of Southern California, School of Medicine, 1840 North Soto Street, Los Angeles, Calif. 90032. Affirmative Action/Equal Opportunity Employer.**

RESEARCH ASSOCIATE

Applications are invited for a research associate in cell biology. The appointment is of 3-year duration and renewable. Starting salary is \$20,000 or commensurate with experience. The candidate should be able to develop his/her independent projects within the grant framework which consists of problems in intracellular transport (nucleocytoplasmic exchange) and nuclear mitotic events (breakdown and reassembly). Experience with biochemical and microinjection techniques would be an advantage. Forward curriculum vitae and three references to:

Dr. Gerd Maul
The Wistar Institute
36th Street at Spruce
Philadelphia, Pa. 19104

Equal Opportunity Employer, M/F/H/V

RESEARCH ASSOCIATES TUMOR IMMUNOLOGY AND VIROLOGY

Recent Ph.D.'s capable of cellular immunology and biochemistry. Knowledge of lymphokine and hybridoma technology and molecular virology desirable for research with exciting tumor system in well-equipped laboratory. Good salary and benefits.

Send curriculum vitae, reprints, and names of three references to:

**Dr. S. Silagi, Cell Genetics Laboratory
CORNELL UNIVERSITY
MEDICAL COLLEGE
515 East 71 Street, New York, N.Y. 10021
Equal Opportunity/Affirmative
Action Employer**

Position: Carry out research and training program in mammalian molecular genetics.

Minimum qualifications:

- 1) A Ph.D. in molecular biology, genetics, biochemistry, or its equivalent,
- 2) At least 2 years of postdoctoral research in molecular biology,
- 3) Documentation of significant research accomplishments in molecular biology, and
- 4) Evidence of outstanding research potential.

Starting date: 1 January 1984 or later.

Position: Permanent; tenure-track or tenured, depending upon qualifications and rank of appointment.

Salary range: \$35,000 and higher, depending on qualifications and rank of appointment.

Application deadline: For fullest consideration, 1 December 1983, but applications will be accepted after that date.

Contact: Dr. Richard L. Davidson
Center for Genetics, Room 1404 CMET
University of Illinois at Chicago
808 South Wood Street
Chicago, Ill. 60612

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW IN VASCULAR CELL BIOLOGY. Position involves the study of the biology and biochemistry of polypeptide growth factors secreted by cultured cells. Protein purification and tissue culture techniques as well as monoclonal antibody methodology will be utilized. This project is part of a multi-laboratory, interdisciplinary research effort toward elucidating molecular mechanisms of atherosclerosis. Salary is negotiable (minimum: \$17,600). Send curriculum vitae and the names of three references to: **Dr. Paul DiCorleto, Division of Research, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44106.**

RESEARCH ASSOCIATE ASSISTANT PROFESSOR

The Department of Infectious Diseases and Microbiology of the Graduate School of Public Health at the University of Pittsburgh seeks candidates for a nontenure-track junior faculty position at the research associate or assistant professor level. The level of the appointment and salary will depend on the candidate's qualifications. Applicants should have a Ph.D. or equivalent degree. Candidates with postdoctoral training and research experience in virology and cellular immunology will be given preference. The position is available immediately. Responsibilities include conducting research under NIH-supported projects on the immunology of cytomegalovirus and Epstein-Barr virus infections and the antiviral immunity of patients with major organ transplants and individuals with acquired immunodeficiency syndrome (AIDS). The appointee will also be expected to participate in team-taught courses in basic virology and infectious diseases and to assist graduate students in their research problems. Send curriculum vitae, description of research interests, recent reprints, and three references to: **Dr. Robert B. Yee, 428 PH, University of Pittsburgh, Pittsburgh, Pa. 15261. The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.**

RESEARCH SCIENTISTS IN PROTEIN CHEMISTRY AND ORGANIC CHEMISTRY

The Dana-Farber Cancer Institute, affiliated with Harvard Medical School, announces openings for research scientists experienced in organic chemistry and protein chemistry, including protein purification and covalent derivatization. Applicants should have postdoctoral experience in protein chemistry and biochemistry. Appointees will join a team involved in research and development of immunotoxins as reagents for treatment of human cancers. Appointments will be on the research ladder at a level equivalent to an instructor. Applicants should arrange for curriculum vitae and three letters of recommendation to be sent to: **Dr. W. Blattler, Dana-Farber Cancer Institute, 44 Binney Street, Boston, Mass. 02115. An Affirmative Action/Equal Opportunity Employer.**

Crop Genetics International, a plant biotechnology company located in Dorsey, Maryland, in close proximity to U.S. Department of Agriculture, Beltsville facilities, will be adding STAFF to its SCIENTIFIC AND PRODUCTION TEAMS. Individuals with skills and experience in plant tissue culture, horticultural management and production, greenhouse and/or nursery management and production, plant pathology, and microbiology are encouraged to apply. Please forward curriculum vitae and a statement of professional experience and objectives to: **Teena Sherwood, Crop Genetics International, 7170 Standard Drive, Dorsey, Md. 21076. An Equal Opportunity/Affirmative Action Employer.**

APPLICATIONS SPECIALIST

Calbiochem-Behring, a La Jolla, California based biochemical/diagnostics manufacturing firm, has an immediate opportunity in research and development for an individual to manage the development of applications protocols for use of chemistry reagents on automated laboratory analyzers. The candidate selected will also be responsible for providing technical support to our sales force and customers in the automated use of Calbiochem-Behring reagents.

The position requires a highly motivated individual with the ability to effectively instruct others in the use of automated analyzers, to negotiate with outside evaluators and to handle technical problems related to reagent applications. Qualified candidates will have a demonstrated aptitude for operating and maintaining complex laboratory analyzers and equipment and a thorough knowledge of enzymology and experience in the development of enzymatic assays. A Doctorate in Biochemistry, Clinical Chemistry or equivalent, or a related Masters Degree and 3-5 years experience is required.

Calbiochem-Behring is a moderately-sized division of American Hoechst Corporation and the clinical chemistry resource for Hoechst AG, the world's largest chemical manufacturer.

Excellent salary, benefits and work surroundings in America's Finest City. Please submit resume and salary history to JOYCE PEDLOW, EMPLOYMENT MANAGER:

Calbiochem-Behring
Division of American Hoechst Corporation
P.O. Box 12087 · San Diego, California 92112

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Hoechst 

IMMUNOLOGIST

The Lovelace Inhalation Toxicology Research Institute is seeking a doctoral-level individual with training and experience in Immunology or Immunotoxicology to join its staff and conduct research leading to an improved understanding of immunologic functions in the lung and alterations in function produced by inhaling airborne toxic substances. The applicant should have a doctoral degree and at least 2 years of relevant experience or equivalent qualifications with demonstrated ability to design, conduct and report independent research. Good written and verbal communication skills are needed. Preference will be given to applicants with a strong immunochemistry background, and the individual selected will be expected to design and conduct basic and applied research both independently and in collaboration with other institute scientists.

The Institute's staff includes physical, biophysical and biomedical scientists whose research involves a multidisciplinary team approach. Its research programs are designed to use studies in laboratory animals to gain an in-depth understanding of the possible long-term health effects in people from inhalation of airborne materials associated with a variety of energy-related technologies. Included are studies to determine both the dose-response relationships and the basic mechanisms which lead to such health effects.

We offer an outstanding benefits program and a competitive salary. Starting date is negotiable. Qualified applicants are invited to submit a curriculum vitae and summary of research interests to: **Personnel Unit, Lovelace Inhalation Toxicology Research Institute, P.O. Box 5890, Albuquerque, NM 87185. (505) 844-9431.**

We Are An Equal Opportunity/Affirmative Action Employer



Interferon Sciences is currently expanding its research facilities. Applications are invited for positions in several aspects of biotechnology:

Molecular Biologists

B.S., M.S., Ph.D.; with experience in cDNA cloning, DNA sequencing or expression of foreign genes in yeast or bacteria.

Molecular/Cellular Immunologist

Ph.D.; senior researcher in the areas of T or B cell hybridomas, T cell activation, immune regulation or lymphokines with a significant record of achievement and experience in managing a laboratory.

Immunochemist

Ph.D.; with working knowledge of classical immunoassays, antibody purification techniques, conjugation procedures, and the ability to characterize and use monoclonal and polyclonal antibodies in affinity chromatography.

Biochemists

M.S., Ph.D.; with experience in protein purification and sequencing techniques, especially as they apply to proteins produced by recombinant DNA technology.

Qualified individuals should submit resumes to:



Linda Zuckerman
Personnel Director
Interferon Sciences, Inc.
783 Jersey Avenue
New Brunswick, New Jersey 08901

RESEARCH ASSOCIATE position available for the study of renal transport and membrane toxicity of aminoglycoside antibiotics. Ph.D. in biochemistry/cell biology required; minimum of 3 years of experience beyond Ph.D. degree preferred. Experience in phospholipid biochemistry, membrane transport, and membrane turnover desired. Send curriculum vitae to: **George J. Kaloyanides, M.D., Division of Nephrology and Hypertension, Health Sciences Center, State University of New York (SUNY) Stony Brook, Stony Brook, New York 11794. SUNY Stony Brook is an Equal Opportunity/Affirmative Action Employer. AK 727.**

RESEARCH ASSOCIATE in cellular neurobiology to study control mechanisms in synaptogenesis and/or the molecular biology of neuromuscular junctions. Background in biochemistry and/or immunology favored. Available for 1 to 5 years starting January 1984. Salary negotiable depending on background. Could interview at Neuroscience meeting. Send curriculum vitae to: **Miriam Salpeter, Section of Neurobiology and Behavior, W113 Mudd Hall, Cornell University, Ithaca, N.Y. 14853.**

RESEARCH FELLOW, DEVELOPMENTAL BIOLOGY. Studies on structure and control of tubulin and protein synthesis factor genes in sea urchin and *Artemia*. Apply to: **Dr. Albert Wahba, Department of Biochemistry, University of Mississippi Medical Center, Jackson, Miss. 39216. Equal Opportunity Employer, M/F/V/H.**

Northeastern Ohio Universities College of Medicine invites applications and nominations for the position of **VICE PROVOST AND SENIOR ASSOCIATE DEAN**. The senior associate dean will be responsible for the academic affairs office of the College of Medicine, the administration of an established undergraduate core curriculum, and its further development and evaluation. As vice provost, the successful candidate will report to the provost/dean and will be in charge of the College of Medicine in the absence of the provost/dean. The major objective of the College of Medicine is the education of physicians for the practice of medicine with special emphasis on the training of primary care physicians. The College of Medicine, in consortium with The University of Akron, Kent State University, and Youngstown State University, offers a 6-year combined B.S./M.D. degree program. Clinical education takes place in the associated hospitals of Akron, Canton, and Youngstown, Ohio.

Requirements include the M.D. degree and extensive experience in medical school administration as well as qualification for a senior academic appointment.

Send curriculum vitae with list of references by 15 November 1983 to: **The Office of the Provost/Dean, Northeastern Ohio Universities College of Medicine, Rootstown, Ohio 44272. An Equal Opportunity/Affirmative Action Employer.**

TRAINEESHIPS

POSTDOCTORAL AND PREDOCTORAL TRAINEESHIPS IN NUTRITION AND ONCOLOGY available immediately. Search is open-ended. Positions available in laboratories investigating basic mechanisms relating dietary components to the etiology, pathogenesis and therapy of cancer. Cooperating departments include Food Microbiology and Toxicology, Human Oncology, Nutritional Sciences, and Oncology. Postdoctoral candidates (with either Ph.D., D.V.M., or M.D.) should send résumé and three references to: **Dr. J. L. Greger, Nutritional Sciences Department, 1415 Linden Drive, Madison, Wis. 53706; telephone: 608-262-2727.** Predoctoral candidates should apply to University of Wisconsin-Madison Graduate School citing interest in this program. *An Equal Opportunity/Affirmative Action Employer.*

TRAINING PROGRAMS

PRE- AND POSTDOCTORAL TRAINING in viruses, nucleic acids, growth and cancer. Applications are invited for positions in an NCI interdepartmental (Biochemistry, Microbiology, and Molecular Biology) training grant program. The primary areas of study (and faculty) include: epidermal growth factor (S. Cohen); mechanism of vitamin A action (F. Chytil); molecular biology of herpesviruses (T. Ben-Porat and A. S. Kaplan); poxviruses (R. Moyer); rhabdoviruses (S. Moyer); adenoviruses (C. Tibbetts); and bacteriophage T4 (G. Mosig); plasmid DNA (R. Bird); regulation of cell proliferation (D. Friedman); and ribonucleoprotein particles (W. LeStourgeon). Citizens or permanent residents are eligible. Write: **Dr. Albert S. Kaplan, Department of Microbiology, Vanderbilt University School of Medicine, Nashville, Tennessee 37232.**

WORKSHOP

ANNOUNCEMENT

NSF-sponsored workshop on "Biomass Engineering: Thermochemical Conversion Research Needs," 25 to 28 October 1983, in Kailua-Kona, Hawaii. Attendance restricted to scientists actively performing fundamental research in the field. Inquiries should be addressed to: **Dr. Michael J. Antal, Jr., Coral Industries Professor, University of Hawaii, 2540 Dole Street, Honolulu, Hawaii 96822; telephone: 808-948-7267.**

FELLOWSHIPS

UNIVERSITY OF COLORADO VISITING FACULTY AND POSTDOCTORAL FELLOWSHIPS FOR RESEARCH IN ATMOSPHERIC AND CLIMATE DYNAMICS, ENVIRONMENTAL AND ATMOSPHERIC CHEMISTRY, ENVIRONMENTAL BIOCHEMISTRY, AND GEOCHEMISTRY. One-year awards offered by the Cooperative Institute for Research in Environmental Sciences (CIRES). Awards may be made to senior scientists, including those on sabbatical leave, or to recent Ph.D. recipients. Stipend is scaled to experience, and the program is open to scientists of all countries. CIRES is supported by NOAA and the University of Colorado. Selection of awardees is made in part on the likelihood of active interaction with CIRES scientists and other research groups in Boulder. Senior CIRES-affiliated scientists working in these fields include James Avery, Susan Avery, Roger Barry, John Birks, R. Ray Fall, Fred Fehsenfeld, Joseph Fletcher, Richard Gammon, William Hay, Murray Johnston, Bruce Koel, Eric Kraus, Uwe Radok, Robert Sani, Robert Sievers, and Harold Walton. Applications for the 1983-1984 academic year awards should be sent to: **Professor R. Sievers, Director of CIRES, Visiting Fellows Program, Campus Box 449, University of Colorado, Boulder, Colo. 80309.** Include curriculum vitae, publications list, and a brief outline of the proposed research. In addition, applicants should request that three persons familiar with their qualifications send letters of recommendation. First consideration will be given to applications received by 1 December. Final application deadline is 15 February. *The University of Colorado is an Affirmative Action/Equal Opportunity Employer.*

LA TROBE UNIVERSITY MELBOURNE, AUSTRALIA LA TROBE RESEARCH FELLOWSHIPS 1984

Applications for research fellowships are invited from persons who have gained doctoral or equivalent qualifications within the last 5 years or so, or who anticipate gaining such qualifications by 30 June 1984.

Applicants must propose a research project which may be in collaboration with La Trobe University research workers or teams.

Two fellowships are available for offer in 1984. Each fellowship will be awarded for an initial period of 12 months with the possibility of renewal for a further maximum period of 12 months.

Salary offered is at the rate of A\$19,333 a year.

Enquirers should briefly indicate the research discipline of interest to them. Applications must be made on the University forms available from the Staff Officer and completed forms marked "Confidential" and addressed to: **The Staff Officer, La Trobe University, Bundoora, Victoria, Australia,** must reach the University no later than 28 February 1984.

PREDOCTORAL/POSTDOCTORAL FELLOWSHIPS in American history and material culture, anthropology, biological sciences, earth sciences, history of art, history of technology and science. Tenable at Smithsonian's museum, laboratory, field, and research facilities for 6 to 12 months. Deadline: 15 January 1984. Contact: **Office of Fellowships and Grants, Smithsonian Institution, L'Enfant Plaza 3300, Washington, D.C. 20560.** Awards are based upon merit, without regard to race, color, religion, sex, national origin, age, or condition of handicap of any applicant.

POSTDOCTORAL FELLOWSHIP available for biochemical study of neurofibrillary tangles in Alzheimer's disease. Experience in subcellular fractionation or protein chemistry is desirable; \$14,000 is the minimum salary; maximum salary is negotiable depending on qualifications. Send résumé and the names of three references to: **Richard E. Galardy, Ph.D., Associate Professor of Biochemistry, Sanders-Brown Research Center on Aging, University of Kentucky, Lexington, Ky. 40536-0230.**

FELLOWSHIPS

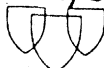
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POSTDOCTORAL FELLOWSHIP available immediately for a recent Ph.D. in biochemistry and/or pharmacology to study metabolism, disposition, and mechanism of action of new and existing anticancer drugs in animals and man. Techniques include drug assay development, in vivo and in vitro metabolism studies, pharmacokinetics, drug/drug and drug/disease interactions, and basic studies on anticancer drug mechanism. Previous research experience of anticancer drugs is desirable but not essential. Apply: **Dr. Garth Powis, Division of Developmental Oncology Research, Mayo Clinic, Rochester, Minnesota 55905. An Equal Opportunity/Affirmative Action Institution.**


MARKETPLACE

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Position information and qualifications requirements may be obtained by contacting:

Cynthia A. Kauff, PMS
National Cancer Institute,
Building 31 Room 3A23
Bethesda, Maryland 20205, 301-496-6864

Applications (SF-171, CV and Bibliography) must be submitted to above address and postmarked not later than November 15, 1983.

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Madeline Lucas
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