

APPOINTMENTS

Samuel P. Gotoff, acting chairman, pediatrics department, Abraham Lincoln School of Medicine, University of Illinois, to chairman, pediatrics department, Michael Reese Medical Center. . . . **Mary A. Kedzuf**, chairman of nursing, University of Nevada, Las Vegas, to dean, College of Allied Health Professions at the university. . . . **Oglesby Paul**, director of ambulatory care, Northwestern University Medical School, to vice president for health sciences at the university. . . . **John A. Flower**, associate provost, Kent State University, to vice president for academic affairs, Cleveland State University. . . . **Charles Wade**, vice president for academic affairs, Alabama State University, to vice president for academic affairs, Lincoln University. . . . **Joshua A. Fishman**, professor of social sciences, Yeshiva University, to vice president for academic affairs at the university. . . . **David H. Elliot**, associate professor of geology and mineralogy, Ohio State University, to director, Institute of Polar Studies. . . . **Susan Goldhor**, visiting fellow in biology, Yale University, to dean, School of Natural Science and Mathematics, Hampshire College. . . . **Francis E. Low**, professor of physics, Massachusetts Institute of Technology, to head, Center for Theoretical Physics at MIT. . . . **Alfred Gellhorn**, dean, School of Medicine, University of Pennsylvania, to director, Center for Biomedical Education, City College, City University of New York. . . . **Paul Olum**, professor of mathematics, University of Texas, Austin, to dean, College of Natural Sciences at the university. . . . **Leroy Bell, Jr.**, associate professor of education, Alabama State University, to dean, School of Graduate Studies at the university. . . . **Robert L. Ringel**, chairman, audiology and speech sciences department, Purdue University, to dean, School of Humanities, Social Science, and Education at the university. . . . **Monroe J. Hirsch**, professor of optometry and physiological optics, University of California, Berkeley, to dean, School of Optometry at the university. . . . **Ernest A. Lynton**, first dean, Livingston College, Rutgers University, to senior vice president for academic affairs, University of Massachusetts.

RECENT DEATHS

Harold Hotelling, 78; retired professor of mathematical statistics and economics, University of North Carolina; 26 December.

Ellis A. Johnson, 67; founder and former director, operations research office, Johns Hopkins University; 16 December.

Edward J. King, 57; chairman, chemistry department, Barnard College; 14 November.

Chester C. Kisiel, 44; professor of hydrology, University of Arizona; 5 November.

Gerard P. Kuiper, 68; founder and director, Lunar and Planetary Laboratory, University of Arizona; 23 December.

George D. Ludwig, 51; chairman, medicine department, Medical College of Ohio; 24 November.

J. Pearce Mitchell, 93; former professor of chemistry, Stanford University; 27 December.

Abraham J. Orfuss, 63; professor of clinical dermatology, New York University School of Medicine; 15 January.

Mason M. Peterson, 69; associate professor emeritus of electrical engineering, West Virginia University; 25 December.

Clark P. Read, 52; professor of biology, Rice University; 24 December.

Oswald K. Sagen, 67; retired assistant director, National Center for Health Statistics, U.S. Public Health Service; 28 December.

Harold W. Sibert, 81; professor emeritus of aerospace engineering, University of Colorado; 17 December.

George K. Smelser, 65; professor of anatomy, College of Physicians and Surgeons, Columbia University; 22 December.

William H. Taliaferro, 78; former professor of microbiology, University of Chicago; 21 December.

John J. Turin, 60; dean, University of Toledo Graduate School; 13 December.

Sigmund L. Wilens, 68; professor of pathology, College of Physicians and Surgeons, Columbia University; 20 December.

Paul C. Witt, 74; professor emeritus of chemistry, Abilene Christian College; 19 December.

Paul Zilczer, 65; physicist and retired technical staff member, Communications Systems, Inc.; 25 November.

Personnel Placement

It is requested that only those employers who will not discriminate on the basis of race, sex, religion, color, or national origin submit positions open advertising.

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POSITIONS WANTED

Biochemist. Ph.D. 1974. Graduate and postdoctoral experience in tissue culture, lipid methodology, TLC, GLC, teaching. Seeking industrial or academic position in southern half of the United States. Available immediately. Box 144, **SCIENCE**. X

Biochemist. D.V.M., Ph.D. 1970. Experience in chemical carcinogenesis, drug metabolism, metabolite identification, enzyme isolation, natural product isolation, analytical and synthesis. Publications. Seeks academic or industrial position. Box 145, **SCIENCE**. X

Biochemist-Microbiologist-Nutritionist. Ph.D. 1971. NIH postdoctoral experience in lipid chemistry, metabolism, enzymology. Several publications. Desires academic or industrial research. Prefers Northeast. Box 146, **SCIENCE**. X

Biologist-Entomologist. Ph.D. Teaching and/or research in a growing liberal arts college or university. Experience in Introductory Biology, General Ecology, and Economic Entomology. Publications. Box 147, **SCIENCE**. X

Bioorganic Chemist. Ph.D. 1966. Three years of postdoctoral training, 1 year of teaching, 4 years of professional research experience. Isolation, purification, and characterization of amino acids, peptides and proteins. Chemical and physical properties of enzymes and mechanism of action of enzymes. Synthesis and structural determination of radioactive biochemicals. Desires academic, research or industrial position. Box 148, **SCIENCE**. X

CNS-Autonomic Pharmacologist. Ph.D. (Pharmacology) 1969, M.Sc. (Organic Chemistry) 1964. Won international scholarships, published review, research articles, served on committees. Broad training and experience including teaching, research, and sales. Combines scientific competence with executive dexterity. Thirty-three, married, two children. Presently Assistant Professor, seeks challenging position. Box 8327, St. Louis, Mo. 63132. X

Economic Geologist. Ph.D. 1966. Publications. Desires academic research-teaching position in western United States. Strong theoretical background with interests in geophysics and geochemistry. Broad North American field exploration experience in shield and cordillera. Current research and publication on porphyry deposits. Box 149, **SCIENCE**. 3/29; 4/5, 12, 19, 26; 5/3, 10, 17

Environmental Study Coordinator seeks challenging administrative position. Experienced interdisciplinary project management, study design and impact analysis. Box 150, **SCIENCE**. 3/29; 4/5

POSITIONS WANTED

Broadly trained Geneticist. Ph.D. 1965. Two years of postdoctoral training; 38. Outstanding teacher, 15 years of professional experience. Special interest innovative undergraduate programs. 2266 Lake Circle, Jackson, Mississippi 39211. X

Immunologist. Ph.D., cellular and humoral, desires teaching/research position; tumor-fetal antigens, autoimmunity, immunoreproduction. Box 151, SCIENCE. X

Information Dissemination Specialist. Ten years' experience in foundation and federally funded programs to reach policy-makers and potential implementers with benchmark results. Prefer agricultural, ecologic, oceanographic sciences. Will relocate. Box 62, SCIENCE. 3/29

Instrument Repair Specialist. Chemistry degree plus 3 years experience repairing wide variety of chemical instruments from spectrometers to thermoregulators. Box 152, SCIENCE. X

Interdisciplinary Biologist. Ph.D. 1972. Desires position where students and teacher explore biology. Teaching (biology, botany, cell and plant physiology, and bioethics) and research (plant growth) experience. Welcomes administrative responsibilities. Box 153, SCIENCE. X

Microbiologist Biochemist. Ph.D. Eleven years of diversified industrial experience. Part of experience is in setting up de novo pilot plants for R & D and production. Desires challenging position in industry or government. Box 154, SCIENCE. X

Neurobiologist, Writer, Editor. Ph.D. (theoretical biology) 1971. Interest in control of movement. Professional and popular publications. Seeks research, research administration, or publishing-related position, preferably in nonurban Northeast, for summer or fall 1974. Box 155, SCIENCE. X

Neurophysiologist. Ph.D. 1968. Nationally and internationally recognized research accomplishments. Carrying out funded research presently. Teaching experience in Medical Neurophysiology. Desires research or teaching/research position. Box 156, SCIENCE. X

Ph.D. with considerable research and teaching experience in **Horticulture** desires to relocate. Most interested in initiating new horticultural programs or revitalizing existing ones at 2- or 4-year institutions. Would also consider plant science research positions. Box 157, SCIENCE. X

Ph.D. Stanford 1962 (biology). Broadly experienced in science and its history, seeks opportunity to pursue a novel approach to **Human Ecology** and integration of knowledge. Published adumbration. Box 158, SCIENCE. X

Radiation Biophysicist. Ph.D. Nine years experience in nuclear medicine, radiation biology, health physics, radiation dosimetry, teaching, and governmental regulatory activities. Numerous publications. Seeks challenging position with university or teaching hospital. Box 160, SCIENCE. X

Physiologist. Ph.D. Postdoctoral training (transport). Seeking research, academic position. Background in membrane, general, and comparative physiology. Teaching experience. Publications. Box 159, SCIENCE. X

Virologist. Ph.D. Viral oncology, tissue culture, medical microbiology, teaching medical students, and experience in industry. Desires active academic teaching-research position at liberal arts college/teaching hospital. Box 161, SCIENCE. X

POSITIONS OPEN

Applications accepted for:

1) **ASSISTANT PROFESSOR OF BIOLOGY.** Ph.D. in health-related area.

2) **ASSISTANT PROFESSOR OF EARTH SCIENCE.** Ph.D., broad training with work in paleontology. Both positions: undergraduate teaching with research encouraged. Have three professional persons write us. Send résumé and transcripts to—**Head of Science Division, Northeast Missouri State University, Kirksville, Mo. 63501.**

POSITIONS OPEN

THOMAS HUNT MORGAN SCHOOL OF BIOLOGICAL SCIENCES UNIVERSITY OF KENTUCKY

Applications are invited for six available faculty positions at the **Assistant Professor** level. Qualifications: Ph.D. and an interest in developing an active research program; competency in teaching courses at the undergraduate and graduate levels. Fields of interest include: (i) **Vertebrate Zoology (Comparative Anatomy and Histology)**; (ii) **General Parasitology**; (iii) **General Virology**; (iv) **General and Applied Microbiology**; (v) **Mycology**; (vi) **Genetics**. Send curriculum vitae, a brief description of experience and current interests in teaching and research, and the names of at least three references to **Search Committee, Director's Office, School of Biological Sciences, University of Kentucky, Lexington, Kentucky 40506**. Deadline for receipt of applications, 4 weeks from date of appearance of this notice. *An equal opportunity/affirmative action employer.*

ASSISTANT PROFESSOR OF CLINICAL ENGINEERING

Applications are invited from physicians, M.D. with practice qualifications certifiable in District of Columbia within 1 year. Candidate must show evidence of ability in computer programming, and research or practical experience in one of the following: mathematics, engineering, or computer science. Teaching experience at pre or post M.D. level desirable. Send inquiries to **Chairman, Department of Clinical Engineering, George Washington University Medical Center, 2300 K St., NW, Washington, D.C. 20037**.

We are an equal opportunity employer.

ASSISTANT PROFESSOR OF ENTOMOLOGY AND ASSISTANT APICULTURIST

Available 1 July 1974. Ph.D. in entomology or related biological sciences. Responsibilities include research with honey bees, teaching in apiculture, and possibly other courses in entomology. Special consideration will be given to applicants with expertise and research experience with honey bees. Send résumé, transcripts, publications, and four letters of recommendation by 30 May 1974 to **Dr. Norman E. Gary, Chairman of Search Committee, Department of Entomology, University of California, Davis, California 95616**.

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ASSISTANT PROFESSOR

Responsibilities to include teaching senior and graduate level courses in immunology and serology and conducting vigorous research program in some area of immunology. Send curriculum vitae and three references to

**Dr. Robert A. Paterson, Head
Department of Biology
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061**

Virginia Polytechnic Institute and State University is an Affirmative Action/Equal Opportunity Employer.

TWO ASSISTANT PROFESSORS

September 1974. Applications are invited from qualified persons with recent postdoctoral experience in the areas of **Plant Physiology** or **Estuarine Ecology**. Regular faculty appointment; no graduate program; facilities to develop research program. Please send résumé, transcripts, and three letters of reference to **Dr. Tom Fast, Department of Biology, Santa Clara University, Santa Clara, Calif. 95053**.

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ASSISTANT PROFESSOR OF PHYSIOLOGY

One or two years postdoctoral experience in neurophysiology. Developing department in a new medical college. Salary is highly competitive. *The University of South Florida is an Affirmative Action Equal Opportunity Employer.* Contact

**Dr. C. H. Baker
Chairman of Physiology
College of Medicine
University of South Florida
Tampa, Florida 33620**

PROFESSOR OF BIOLOGICAL SCIENCES

Dartmouth College plans to make a senior appointment in the Department of Biological Sciences. Candidates for this position should have recognized distinction in scholarship and teaching, and should be prepared to serve as department chairman. *Dartmouth is an equal opportunity employer; women and minority applicants are urged to apply.* Send all résumés to **Dean James F. Hornig, Wentworth Hall, Dartmouth College, Hanover, N.H. 03755**.

POSITIONS OPEN

UNIVERSITY OF CALIFORNIA, BERKELEY DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Applications are invited for a position as **Assistant Professor in Microbiology**. The department intends to develop areas of prokaryotic and eukaryotic cell biology, and prefers candidates whose main interests lie in these areas. Competence in microbial physiology, biology of eukaryotic microorganisms, or host-parasite interactions at the molecular level would make the candidate additionally desirable. Applicants should request three referees to write, and send curriculum vitae, bibliography, and a summary of research plans to **Chairman, Department of Bacteriology and Immunology, University of California, Berkeley, Calif. 94720**. *The University of California is an affirmative action employer. Both female and minority applicants are urged to apply.*

BIOCHEMIST

Immediate postdoctoral opening: Research in hormone-sensitive membrane biochemistry. Experience in protein isolation procedures and preparation of radiolabeled peptides desirable but not necessary. Send résumé to: **Professor Benedict J. Campbell, Department of Biochemistry, University of Missouri Medical School, Columbia, Missouri 65201**.

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BIOLOGY DEPARTMENT

The Biology Department of NEW YORK UNIVERSITY is seeking to fill a permanent staff position at the Assistant Professor level in the area of virology-immunology. Appointments are on a 9-month basis, with the average teaching load being one undergraduate and one graduate course per semester. Individual research activities are expected. Applicants should send complete curriculum vitae and request three letters of recommendation to be sent to: **Dr. Joseph LoBue, Chairman, Recruitment Committee, Biology Department, New York University, New York City, New York 10003**.

New York University is an equal opportunity employer subscribing to an Affirmative Action Program.

BIOMEDICAL ENGINEER

(Physiology)

National Institute of Neurological Diseases and Stroke

Responsibilities will be to assist the Head of the Biomedical Engineering Research and Development Section of NINDS to develop and manage planned directed research projects for the development of improved clinical instrumentation applied to the diagnosis and treatment of neurological diseases and related disorders. This involves working with advisory groups to identify research and development needs and to develop project objectives to fill these needs, and serving as Project Officer on contracts to carry out the research and development work to meet those objectives. Some time and limited facilities will be available to personally carry on laboratory work.

A Ph.D. or equivalent is preferable. Background should include training and/or professional experience in instrumentation engineering, physics, and life sciences (particularly physiology) sufficient to properly apply sound biomedical engineering principles and advanced technology to the clinical instrumentation problems addressed. Since the primary responsibility is to manage contract directed research, a capability and interest in contract program monitoring is necessary.

To apply, forward résumé or Federal application SF-171 to **Personnel Office, NINDS, Building 31, Room 8A-25, NINDS, Bethesda, Maryland 20014**. Deadline for receipt of applications is 6 May 1974.

An Equal Opportunity Employer

CHAIRMAN OF PHARMACOLOGY

Applications and nominations are invited for the position of Chairman, Department of Pharmacology, University of Massachusetts Medical School, starting September 1974. Please send résumé to **Chairman, Pharmacology Search Committee, Box 335, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Massachusetts 01605**. *We are an affirmative action employer.*

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RESEARCH SPECIALIST

Biomedical Systems

The General Foods Technical Center has an immediate opening for a Biomedical Research Specialist with the ability to design projects, administer studies and coordinate all phases of execution, data collection and analysis, and the reporting of results, conclusions and recommendations. In addition, the incumbent will monitor clinical studies sponsored by GF but conducted by external investigators.

Our candidate must have 4 to 7 years experience with analysis of biological data and the conduct of biological experiments, especially clinical ones. A Ph.D. in a biological science or biostatistical area is required. In addition, the candidate is expected to have professional contacts in the clinical and biostatistical fields.

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SENIOR LECTURER/LECTURER IN PLANT PHYSIOLOGY

Applications are invited for appointment to the above post in the Department of Botany and Microbiology. Duties are to be assumed on 1st July 1974 or as soon as possible thereafter.

Preference will be given to those interested in plant nutrition, ion uptake, or water relations.

Salary will be in the following ranges:

Senior Lecturer R 7245-R 9315

Lecturer R 5520-R 7935,

the initial salary to be determined according to qualifications and experience. Benefits include an annual bonus, pension and medical aid facilities, and a housing subsidy, if eligible.

Intending applicants should obtain the information sheet relating to this post from the Registrar, University of the Witwatersrand, Jan Smuts Avenue, Johannesburg, South Africa, with whom applications should be lodged not later than 19th April 1974. U.S.A. applicants may obtain the information sheet from the London Representative, University of the Witwatersrand, Chichester House, 278 High Holborn, London WC1, with whom a copy of the application should be lodged.

POSITIONS OPEN

CHAIRMAN, DEPARTMENT OF BIOLOGY

The University of South Alabama, Department of Biology, is seeking a chairman. Appointment will begin June or September 1974. Applicants should have a broad training in biology, teaching experience, and active research interests. Graduate program experience is desirable; the department has just initiated a M.S. in biology. Candidates should respond promptly. Send résumé to **Dr. David M. Dean, Department of Biology, University of South Alabama, Mobile, Ala. 36688.**

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CHAIRPERSON, DEPARTMENT OF PSYCHOLOGY

University of Texas at Arlington seeking a senior level experimental psychologist, for September 1975, who is research oriented and has published extensively. Good research opportunities; limited administrative responsibilities. Department is exclusively experimental and offers M.A. and Ph.D. in experimental psychology. Send résumé to **Search Committee, Psychology Department, University of Texas at Arlington, Arlington, Texas 76019.**

Applications from women and members of minority groups are welcomed.

CLINICAL ENGINEERING ADMINISTRATOR

For M.S. program. Duties include teaching and helping to evolve new program. Advanced degree in engineering, familiarity with hospital instruments and safety plus background in applied engineering. Send résumé to: **Leon Harmon, Head, Department of Biomedical Engineering, Case Western Reserve University, Cleveland, Ohio 44106**

Application invited for the position of **DEAN, SCHOOL OF NATURAL SCIENCES AND MATHEMATICS.** Earned doctorate, evidence of scholarly accomplishment, minimum of 5 years college teaching, some administrative experience required. Appointment effective July or September 1974. Interested candidates send résumé and names of three references, before 10 April 1974, to: **Dr. Robert B. Fischer, Dean of Academic Administration, California State College, Dominguez Hills, Dominguez Hills, Calif. 90747.**

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DEVELOPMENTAL PSYCHOLOGIST

Yale University. Assistant professor with strong research commitment to developmental psychology, and a wide range of ability in teaching. *Equal Opportunity Employer.* Contact

William Kessen

Professor and Chairman

Developmental Search Committee

**Department of Psychology, 333 Cedar St.
New Haven, Conn. 06511**

DIRECTOR—RESEARCH REACTOR UNIVERSITY OF MISSOURI

The University of Missouri invites applications from individuals experienced in reactor-related research to fill the position of director of its Research Reactor Facility, located in Columbia, Mo. The facility operates a 5-MW light water flux trap reactor (application submitted for upgrading to 10-MW), and includes two large, well-equipped counting rooms, electronics and machine shops, and 17 research laboratory rooms. Many university departments utilize these facilities with active research programs in a variety of areas.

The director would be expected to provide critical scientific leadership in the development of new research programs. As chief administrative officer of the facility, he would have ultimate responsibility for the continued safe operation of the reactor, in compliance with AEC regulations. In addition to a strong scientific background, applicants should have some previous experience in research or reactor administration. An academic appointment and responsibilities are an inherent part of the position.

Send curriculum vitae, bibliography, and names for letters of recommendation to **Dr. C. W. Thompson, Physics Department, University of Missouri, Columbia, Missouri 65201.**

The University of Missouri is an equal employment and educational opportunity institution.

HUMAN BEHAVIORAL GENETICIST

Applications are invited for a research and teaching position in behavioral genetics. Competence and interest in human research is required, with emphasis on either behavioral pathology or chromosome banding techniques particularly desirable. Curriculum vitae and three letters of reference should be sent, before 15 April, to **Dr. Gerald E. McClearn, Director, Institute for Behavioral Genetics, University of Colorado, Boulder, Colorado 80302.** *The University of Colorado is an equal opportunity employer.*

POSITIONS OPEN

IMMUNOLOGIST, Ph.D.

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INSECT PHYSIOLOGIST

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MARINE MICROPALAEONTOLOGIST

The Department of Geology at Case Western Reserve invites applications for a position at the Assistant or Associate Professor level in Micropaleontology. Position involves research and teaching at the undergraduate and graduate level. Interest in quantitative paleoecological applications of micropaleontology is required. Qualified applicants send résumé, references, and publications to **Professor F. G. Stehli, Geology Department, Case Western Reserve University, Cleveland, Ohio 44106.** *Equal opportunity employer.*

MICROBIOLOGIST

Temporary 1-year appointment for a Ph.D. as Assistant Professor starting fall 1974 to teach microbiology for nurses, general botany, and genetics. Salary: \$10,000 to \$11,000 for 9 months. Additional compensation for teaching microbiology during summer of 1974. Send résumé to **Sherry Anderson, Chairman, Department of Natural Sciences, Castleton State College, Castleton, Vermont 05735.** *An Equal Opportunity Employer.*

POPULATION BIOLOGIST

Fall 1974. Assistant Professor, Ph.D., teach core course in Population Biology and course in area of specialty. Active research program in area of population zoology expected. Send résumé to: **J. J. Friauf, Department of Biology, Vanderbilt University, Nashville, Tennessee 37235.**

All qualified candidates, including minorities and women, are encouraged to apply.

RESEARCH DIRECTOR

Institute with quality private college with expanding contract research activities seeks director familiar with funding agencies and grantsmanship. Academic and administrative background desirable.

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SCIENCE, VOL. 183

POSITIONS OPEN

INVERTEBRATE ZOOLOGIST ST. CROIX, U.S. VIRGIN ISLANDS

Position for second resident biologist available 1 September 1974 at West Indies Laboratory, Fairleigh Dickinson University, St. Croix. Limited to Ph.D. Assistant Professor rank and to persons with field experience well qualified to teach marine invertebrate zoology at undergrad and graduate levels; opportunities for research. Full curriculum vitae, transcripts, statement of professional goals, and three letters of recommendation should be sent as soon as possible to: **Dr. John C. Ogden, Chairman of Search Committee, West Indies Laboratory, P.O. 4010, Christiansted, St. Croix, U.S. Virgin Islands 00820.**

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PLANT BREEDER-PHYSIOLOGIST Vacancy 5146

Plant Physiology Division, New Zealand, requires a plant breeder with expertise in plant physiology. Applicants should be capable of breeding and/or geneticists interested in producing and evaluating populations with differing physiological characteristics—particularly in maize, sorghum, and tropical forage grasses.

Excellent research facilities, including major controlled environment areas, are available. Collaborative work is encouraged between a professional research staff of 25.

A Ph.D. with some field or research experience is preferred.

Salary payable would be up to \$NZ11,671, which is approximately \$US16,500, or beyond depending on qualifications and experience.

Curriculum vitae and two letters of recommendation should be sent to the **Director, Plant Physiology Division, Department of Scientific and Industrial Research, Palmerston North, New Zealand.**

CSIRO

DIVISION OF LAND USE RESEARCH RESEARCH SCIENTISTS

General: The Division of Land Use Research has initiated a research program on techniques and methodology for nonmetropolitan land use planning. A pilot study in association with the NSW State Government and the Centre for Resource and Environmental Studies at the Australian National University is being undertaken on the NSW South Coast. The aim is to integrate both biophysical and socioeconomic determinants into a procedure for defining land use options.

REF: 618/367

Field: Regional Economic Studies.

Duties: The Division is seeking a regional economist to undertake a critical evaluative study leading to innovations in, and modifications of, current methods of regional economic analysis as they relate to regional land use planning. Particular topics of interest include (i) the establishment of conservative conditions for the viability of relevant enterprises within a region and (ii) the relationship between land use within a region and local income/employment patterns.

Qualifications: A Ph.D. degree or equivalent qualifications, together with demonstrable research ability. Experience in a multidisciplinary research team involving social and biophysical scientists would be an advantage.

REF: 618/368

Field: Transport Studies.

Duties: The Division is seeking a research scientist in the field of regional transport studies to investigate the relationship between regional transport networks and regional land use planning. This will include devising methods for the descriptive and normative analysis of transport systems.

Qualifications: A Ph.D. degree or equivalent qualifications together with demonstrable research ability. Experience in a multidisciplinary research team involving social and biophysical scientists would be an advantage.

Salary and tenure: Appointments will be made within the salary ranges of Research Scientist or Senior Research Scientist: \$9,380 to \$14,290 per annum. Either indefinite or fixed term appointments may be negotiated. Indefinite appointments carry Australian Government Superannuation benefits.

Applications: Applications stating full personal and professional details, the names of at least two referees, and quoting the appropriate reference number should reach: **The Chief, Division of Land Use Research, CSIRO, P.O. Box 1666, Canberra City, A.C.T. 2601 Australia, by 8 April 1974.**

POSITIONS OPEN

RESEARCH ASSOCIATE for program dealing with the development of social cognition and social relations in adolescence: demonstrable design, data collection, analysis, and interpretation skills required. Research experience with children and/or adolescents required. Ph.D. concentration in combination of cognitive and social development strongly preferred. Two-year, 12-month appointment (with 1 month's vacation) with extension dependent upon funding. Ph.D. or requirements for it must be completed by 26 August 1974 (when appointment begins). Send curriculum vitae with names of referees and statement of bases for interest or special qualifications to: **Professor John P. Hill, Department of Human Development and Family Studies, Cornell University, Ithaca, N.Y. 14850.**

An Equal Opportunity Employer

TERATOLOGIST PHARMACOLOGIST BEHAVIORAL TOXICOLOGIST

Midwest Research Institute, a not-for-profit organization, offers excellent career opportunities in the rapidly expanding fields of pharmacology and toxicology.

Teratologist—

Experience in teratology of rodents; experience with other animals beneficial.

Pharmacologist—

Experience in drug absorption and metabolism; knowledge in analytical technique desirable.

Behavioral Toxicologist—

Opportunity to develop methodology and research program in behavioral toxicology of environmental chemicals.

Candidates with doctoral degrees preferred. Careful consideration will be given to Masters with experience. Salaries are competitive and will be based on experience and training. Please send, in complete confidence, résumé with education, work experience and salary requirements to:

**Martin N. Schuler
Manager of Staff Development**



MIDWEST RESEARCH INSTITUTE
425 Volker Boulevard
Kansas City, Missouri 64110

An Equal Opportunity Employer M/F

POSITIONS OPEN

MEDICAL HISTORY

Applications invited for **Chair in the History of Medical and Related Sciences**. The successful candidate will have a scholarly record in teaching and research. He will be required to develop and supervise a full range of academic activities in the field of medical history and related sciences, and to cooperate in the development and operation of the Jason A. Hannah Institute devoted to the same objectives. Salary dependent upon qualifications and experience. Closing date 31 May 1974. Apply to **H. Garfield Kelly, M.D., Vice Principal (Health Sciences), Queen's University, Kingston, Ontario, Canada.**

SENIOR PSYCHIATRIST

Key Administrative position in Municipal Hospital Department of Psychiatry. Requires skills in program development and evaluation, community care, and teaching. Boards and New York State licensure required. Faculty appointment and salary appropriate to experience. Send curriculum vitae to: **Arthur Frie, Assistant Administrator, Fordham Hospital, Southern Blvd. and Crotona Ave., Bronx, N.Y. 10458.**

VERTEBRATE PALEONTOLOGIST

The Museum of Paleontology and the Department of Geology and Mineralogy of the University of Michigan invite applications for a position at the rank of Assistant Curator and Assistant Professor in the area of higher vertebrate paleontology. Candidates must have a Ph.D. with professional experience preferably specializing in fossil mammals. Duties will include conduct of an active field and laboratory research program in vertebrate paleontology, teaching responsibility for about three courses per year including occasional assignment to geology summer field course, curation of an extensive collection of fossil vertebrates, and supervision of graduate students. The 12-month appointment will begin 1 July or 1 September 1974. Curriculum vitae, sample publications, and three letters of recommendation should be sent to **Dr. G. R. Smith, Museum of Paleontology, University of Michigan, Ann Arbor, Michigan 48104.**

A nondiscriminatory affirmative action employer

ZOOLOGIST/ECOLOGIST

Temporary position, assistant professor rank, for Ph.D. with preferred specialization in systems or population ecology, to begin 25 August 1974. Expected to teach animal behavior course and to participate in general biology; opportunity for teaching other upper level and graduate courses. Send curriculum vitae and references to **Dr. J. A. Sealander, Chairman Search Committee, Department of Zoology, University of Arkansas, Fayetteville 72701.**

An equal opportunity/affirmative action employer

GRADUATE STUDY

An opening is available for a suitably qualified **GRADUATE TO WORK FOR AN M.Sc. OR Ph.D. DEGREE IN THE FIELD OF SCANNING ELECTRON MICROSCOPY** in exploration of biological applications of cathodoluminescence. Suitable applicants could be either biology graduates with good background in physics or physics graduates with interests in biology and electron microscopy. They should send details of courses taken and so forth to **G. H. Haggis, Biology Department, Carleton University, Ottawa, Ontario, Canada**. Restricted to Canadian citizens or Canadian residents with landed immigrant status.

GRADUATE TRAINEESHIPS— MICROBIOLOGY

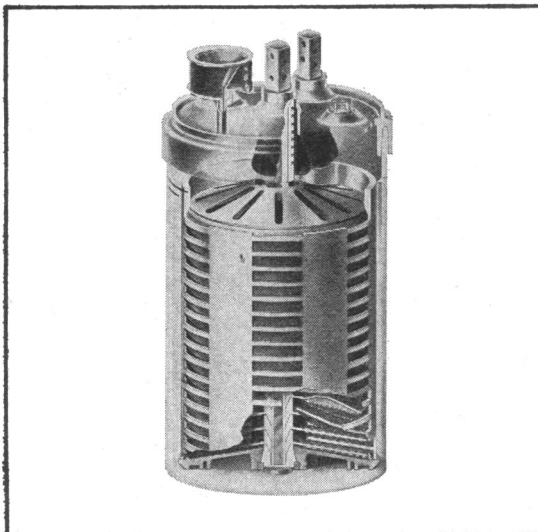
Traineeships in Microbiology beginning September 1974 (Genetics, Virology, Molecular Biology, Microbial Chemistry, Immunology, Bacteriophage, Venereal Disease, Cytology). Full or partial tuition remissions and stipends up to \$2400 per year. Contact: **Dr. Arthur K. Sz, Department of Microbiology, Georgetown University Schools of Medicine and Dentistry, 3900 Reservoir Rd., NW, Washington, D.C. 20007.**

FELLOWSHIPS

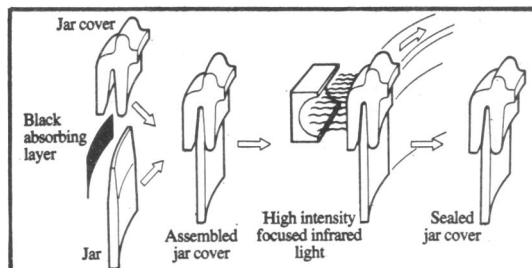
POSTDOCTORAL FELLOWSHIPS IN NEUROPHARMACOLOGY

Applicants holding the Ph.D. or M.D. degree will be considered for research fellowships in neuropharmacology or neurophysiology. Research training under experienced sponsorship will emphasize electrophysiological techniques, such as extracellular recording and iontophoresis studies in mammals. Starting date open. For information write: **S. C. Wang, M.D., Ph.D., College of Physicians and Surgeons, Columbia University, 630 West 168 St., New York, N.Y. 10032.**

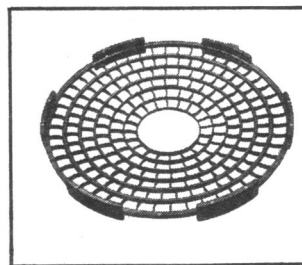
WESTERN ELECTRIC REPORTS



A cutaway view of the new lead-acid battery. For use in the Bell System, four types—each with a different ampere-hour capacity—will replace the 60 configurations currently in use over the same capacity range.



In the sealing process, focused infra-red light is absorbed in a carbon black coating at the jar-cover interface, causing localized melting of the plastic.



The positive grids are designed so that as corrosive growth occurs the space between hoops remains constant. Thus contact with the paste is maintained and electrical capacity actually increases with age as corrosion produces additional lead-dioxide material.

Developing a new lead-acid battery.

Every year, Bell System telephone companies spend over \$30 million to buy and maintain the lead-acid batteries they use as intermediate sources of standby power during emergencies.

So they know just how susceptible all lead-acid batteries are to problems caused by corrosion. Problems such as gradual loss of capacity, short-circuits and cracking that could result in acid leaks and occasional fires.

That's why Bell Labs and Western Electric engineers recently undertook the first major improvements on what is essentially a 100-year-old design.

The result: a revolutionary, cylindrical lead-acid battery with a jar and cover fabricated from an improved flame-retardant, impact-resistant polyvinylchloride. The bond between jar and cover is leakproof due to a new infra-red sealing process.

Inside the battery are circular, cone-shaped grids cast of pure lead rather than a lead alloy, then stacked horizontally in a self-supporting structure. Positive grids are cast with large grain-size to minimize corrosion. They're then filled with a paste (tetrabasic lead sulfate) whose rod-like particles interlock for maximum mechanical stability.

These new features required new manufacturing techniques. For example, how could potential suppliers best mass-produce positive plates of the required grain-size and paste the grids rapidly and efficiently, given their conical shape and the new oxide material's crystal structure?

Western Electric's Purchased Product Engineering organization and Bell Labs set up a design capability line at a company subsidiary, Nassau Smelting & Refining.

Using machinery developed at Western Electric's Kearny Works, they refined production methods and materials that made it possible for a supplier to produce the new battery economically, in commercial quantities and to Bell System specifications.

And Western Electric plans to achieve still further savings through a continuing cost-reduction program.

Conclusion: Close cooperation between Bell Labs and Western Electric has resulted in the creation of a superior lead-acid battery. Its expected useful lifetime is at least 30 years—double that of even its best predecessors. It lowers maintenance costs substantially. And its unusual design virtually eliminates the hazard of fire due to mechanical failure.



Western Electric

We make things that bring people closer.