

There are several advancing research areas that are represented in this volume. First, there are careful descriptions of when and where mammals deposit scent in nature and a fascinating attempt to correlate habitat type, phylogeny, and ecological niche with at least some aspects of the olfactory signal in a closely related group, the nocturnal prosimians (Schilling). Second, there have been some advances in understanding the chemistry of biologically important odors (Booth, Gorman) and in determining the discriminatory abilities of individuals for species-specific odors (Schilling, Gorman). But certain interesting and important advances in mammalian olfaction are barely represented, for example concerning the involvement of the vomeronasal organ in reproduction. Also, there is no summary of the available information on the chemistry of mammalian glandular secretions (the presumed "signals"), although there is a review of scent glands. Thus, although this volume contains some new and interesting research findings and several solid reviews of problems in olfaction, it does lack discussion of some major research areas.

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Seabirds

Behavior of Marine Animals. Current Perspectives in Research. Vol. 4, Marine Birds. JOANNA BURGER, BORI L. OLLA, and HOWARD E. WINN, Eds. Plenum, New York, 1980. xx, 516 pp., illus. \$45.

Marine birds, though taxonomically diverse, have a lot in common. Of greatest importance is the fact that they have to breed on land and forage at sea. Natural selection may yet produce an ovoviviparous murrelet, outdoing those real species in which the chicks go to sea when two days old, but for now such a murrelet must remain in the company of Hardy's swift (D. Lack, *Bird Notes* 30, 258 [1963]) and seabirds must nest, often colonially, on islands or coastal sites protected from terrestrial predators. There, they are accessible for the kind of studies of reproductive behavior that dominate the present book.

There has been a tardy realization that oceanic birds are an integral element in marine ecosystems, and this is reflected at the start by the stimulating though brief review by Richard Brown of seabirds as marine animals (in which, inci-

dentally, figs. 1A and 1B have been interchanged). Further insight is provided by Bernice Wenzel, who reviews evidence indicating that albatrosses and petrels, constituting the most oceanic group of birds, really do use olfaction extensively in finding food.

Almost the whole of the rest of the book, however, relates to seabirds on their breeding grounds. The scope is further restricted by the strong emphasis on the gulls and their allies and on the temperate zone and by the lack of representation of the "British school," whose long-term population studies have made seabirds better known demographically than, perhaps, any other group of organisms apart from humans.

Many recent workers have focused on seabird reproductive behavior from the point of view of evolutionary ecology rather than ethology. Although there is surprisingly little discussion here of the adaptive value of coloniality, there is an extended treatment of reproductive synchrony by Michael Gochfeld, which left me wondering whether Fraser Darling's hypothesis on the role of social stimulation within colonies still merits so much attention. There are timely and competent reviews of breeding habitat selection (Francine and Paul Buckley), adaptive functions of development (Roger Evans), and mate selection and mating systems (George Hunt), although in the last paper the author perhaps tries rather too hard to find field data conforming to contemporary evolutionary theory.

The outstanding contribution, in my view, is Joanna Burger's long, hard look at the data and ideas relating to the transition to independence and post-fledging parental care. Becoming independent is clearly a hazardous step for young seabirds competing with adults in unproductive environments; this paper, together with John Ryder's on the effects of age on breeding, leaves one in little doubt that the failure of many seabirds to breed until they are several years old, which has long intrigued ecologists, reflects the difficulty encountered by a relatively unskilled and inexperienced bird in reaching prime condition, and acquiring a mate and nest site, early enough in the season to have a reasonable chance of successful breeding.

A reflective essay by C. G. Beer on communication in gulls is of particular value as a reminder that the conclusions of rigorous ethological analysis can be conveyed in clear and elegant language; some other contributions, such as Montevicchi and Porter's study of parental investment in gannets, suffer by comparison. The final paper, William South-

ern's analysis of distribution and orientation of North American gulls, is flawed by presentation of banding recovery data mainly in the form of indigestible computer maps and by omission of the potentially interesting analysis of movements by age-class.

The editors of the volume have adopted a low profile, not attempting to achieve the kind of uniformity of presentation that one takes for granted in a journal, for instance in treatment of scientific names. Furthermore, they have apparently not read the proofs, with the result that the incidence of typographical errors varies wildly among the papers, reaching a peak on p. 325, where four out of eight scientific names are misspelled; my review copy is rapidly taking on the appearance of a corrected galley proof.

The reader finishes the book knowledgeable about North American seabird work and related studies elsewhere. One is left with the curious impression, however, that for most of the contributors the sea and its characteristics are almost irrelevant. It is especially striking, at a time when the economics of foraging forms a major strand in the literature of animal behavior, to find so little in this book on feeding behavior. Ways must be found to focus more precisely on the interactions of the birds with their marine resources if seabird biology is not to languish in the doldrums.

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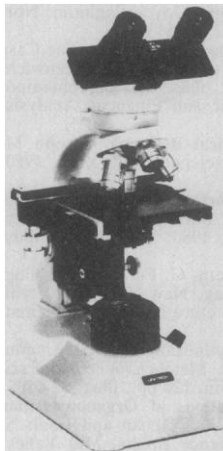
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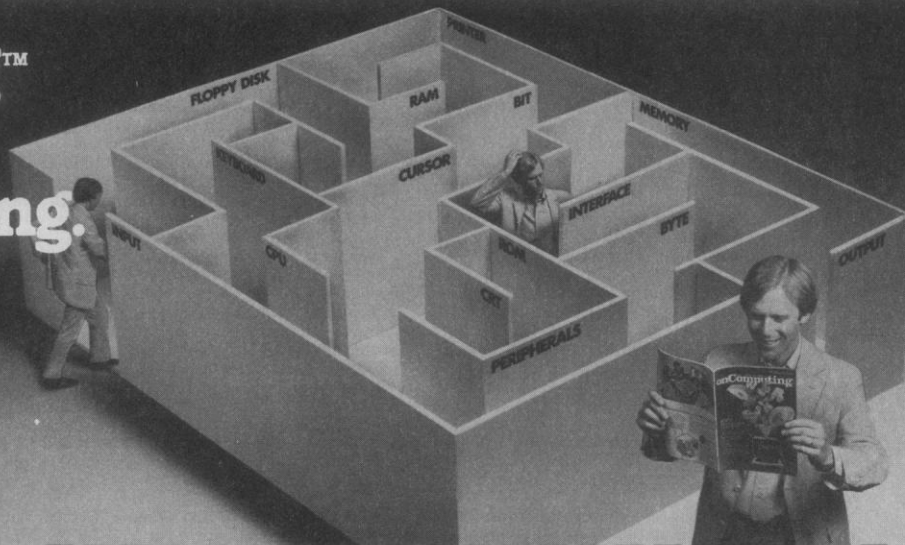
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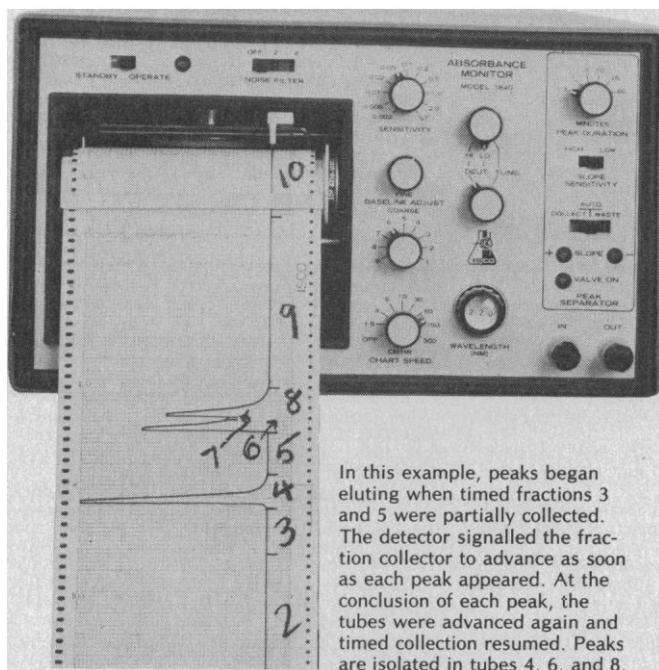
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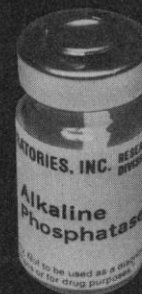
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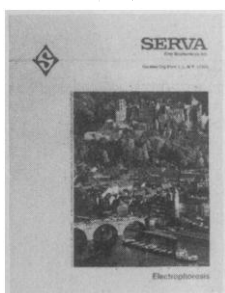
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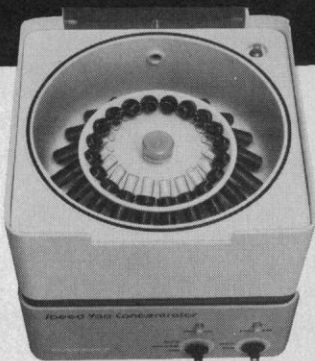
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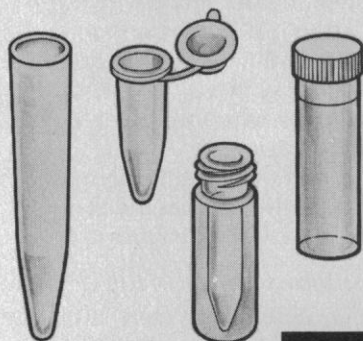
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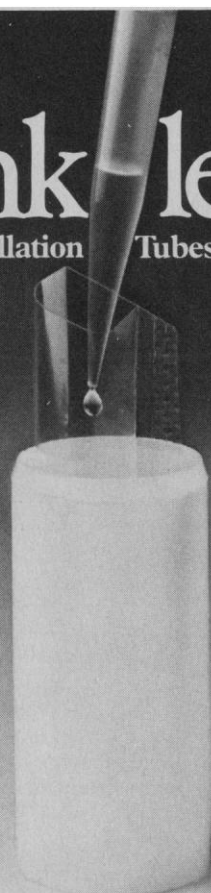
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Applications are invited for a faculty position available 1 July 1981. Applicants should possess a Ph.D. in anatomy with at least 1 year of teaching experience in gross/neurosciences. Research interests open. Rank and salary dependent upon qualifications and experience. Teaching responsibilities may involve both medical and physician's assistant training programs. Send curriculum vitae and names of three references to: **William J. Dyche, Ph.D., Assistant Dean for Pre-Clinical Affairs, College of Osteopathic Medicine and Surgery, 3200 Grand Avenue, Des Moines, Iowa 50312. Equal Opportunity Employer.**

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COLLAGEN BIOCHEMIST. Faculty position in research medicine available 1 July 1981 for Ph.D. in biochemistry. Postdoctoral experience, demonstrated expertise in structural analysis of collagens essential. Send curriculum vitae, summary of research interests, and names of three references by 27 April 1981 to: **E. C. LeRoy, M.D., Director, Rheumatology and Immunology Division, Department of Medicine, Medical University of South Carolina, Charleston, S.C. 29425. An Equal Opportunity/Affirmative Action Employer, M/F/H.**

POSITIONS OPEN

ANATOMY—CELL BIOLOGY

Two faculty positions are available 1 September 1981 at the level of assistant professor or associate professor. The department is seeking individuals with strong research programs in cell biology, preferably with extramural funding. Excellent research facilities are available at our campus in Westchester County, 35 minutes from New York City. Teaching responsibilities to first-year medical students may involve participation in gross anatomy (including human embryology); histology (including cell biology); neuroanatomy (as a major component of an interdepartmental neurosciences course). Opportunities are available for supervision of M.S. and Ph.D. students in the Graduate Program. Applicants should send complete curriculum vitae (including details of research funding) with names and addresses of three references to:

**Dr. Donald Orlic, Chairman
Anatomy Department Search Committee
New York Medical College
Department of Anatomy
Valhalla, New York 10595**

ASSISTANT DEAN, College of Agriculture, University of Minnesota, to provide leadership in international programs in agriculture. Qualifications: Ph.D. degree in agriculture or closely related science, plus 5 to 8 years of experience. Proven academic administrative ability. Knowledge of international programs, including overseas experience. Desire candidate to have knowledge of and experience with funding agencies of international agricultural programs. Preference given to candidates proficient in one or more foreign languages. By 15 May 1981, send résumé, transcripts, and three letters of recommendation to: **Dr. D. W. French, Department of Plant Pathology, 304 Stakman Hall, University of Minnesota, St. Paul, Minn. 55108. The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.**

ASSISTANT PROFESSOR OF BIOCHEMISTRY

The Biochemistry Department of the George Washington University School of Medicine and Health Sciences, Washington, D.C., is seeking a Ph.D. graduate for appointment at the assistant professor level. This is a fully funded research-track position tenable for up to 5 years during which time the successful applicant will be given opportunity to apply for independent funding. Participation in the graduate teaching program of the department is expected, and preference will be given to applicants with background and training in the areas of cell culture or lipid and lipoprotein metabolism. The salary will be commensurate with experience. Applications with names and telephone numbers of three referees should be sent to:

**Director of Postgraduate Appointments
Department of Biochemistry
George Washington University
School of Medicine and Health Sciences
2300 Eye Street, NW
Washington, D.C. 20037
Equal Opportunity Employer**

The **SPACE TELESCOPE SCIENCE INSTITUTE**, to be operated by The Association of Universities for Research in Astronomy, Inc., under contract to The National Aeronautics and Space Administration, has listed several positions for **ASTRONOMERS** with the job register of The American Astronomical Society. Copies may be obtained by calling the Institute at: **301-338-8580.**

CARDIOLOGIST—The Division of Cardiovascular Disease of the Department of Medicine at the University of Alabama in Birmingham has available **five positions** at the instructor and **two positions** at the assistant professor level. The positions are open to qualified individuals fulfilling three criteria. First, the individual must have experience in the care and management of patients with cardiovascular disease and in cardiac catheterization. Second, the individual must have a firm commitment to teaching programs oriented to medical students, graduate students, house officers, and fellows. Finally, the individual should have a research background and be able to carry out independent research. Apply to: **Division of Cardiovascular Disease, Department of Medicine, University of Alabama Medical Center, Birmingham, Alabama 35294, attention: Norma McSweeney; telephone: 205-934-3285. An Equal Opportunity/Affirmative Action Employer.** Expiration date for receipt of applications: 30 April 1981.

CONSULTANT— PHARMACEUTICAL RESEARCH AND DEVELOPMENT

Applications are invited from persons with considerable (10 to 15 years) experience in pharmaceutical research and development, to act as consultant for a leading Spanish pharmaceutical company. The post will be very well remunerated and traveling expenses will be paid. It would entail visiting the company's research laboratories four to five times per year. A suitably qualified applicant may also be entitled to join the company's Board of Consultants.

Interested persons should apply to the:

**Managing Director
P.O. Box 3224
Madrid, Spain**

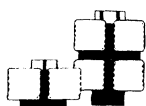
Professor and Chairperson

**Department of Psychiatry
and Behavioral Science**

The State University of New York (SUNY) at Stony Brook invites applications for the position of professor and chairperson, Department of Psychiatry, School of Medicine. The department is responsible for educational and clinical programs in psychiatry and behavioral science at University Hospital, Stony Brook, and the Northport Veterans Administration Medical Center. Research programs in a number of areas of psychiatry are active in the department. The new chairperson will be expected to provide leadership in the continuing development of the department, particularly in biological psychiatry, in order to strengthen its clinical, educational, and research programs. Applicants for the position should have a distinguished background in academic psychiatry and be pursuing an active research program in biological psychiatry.

Applications, including curriculum vitae and supporting documents, should be sent by 15 May 1981 to: Dr. Robert Y. Moore, Chairman, Psychiatry Search Committee, Department of Neurology, Health Sciences Center, SUNY at Stony Brook, Stony Brook, N.Y. 11794.

SUNY at Stony Brook is an Equal Opportunity/Affirmative Action Employer.



Health Sciences Center
Stony Brook

POSITIONS OPEN

ASSISTANT PROFESSOR, PHOTOBIOLOGY INSTITUTE. Brandeis University, Institute for Photobiology of Cells and Organelles, has a tenure-track opening at the assistant professor level for fall 1981. A Ph.D. in biology, biochemistry, or other appropriate field is required. Postdoctoral experience is desirable, together with evidence of research accomplishment. We are interested in someone who will complement our present offerings in photobiology at the undergraduate and graduate levels and who will initiate and pursue a vigorous research program in some aspect of photobiology. Send updated curriculum vitae, three letters of recommendation, and available copies of recent work (these will not be returned unless accompanied by a self-addressed stamped envelope) to: **Professor Jerome A. Schiff, Director, Institute for Photobiology, Brandeis University, Waltham, Mass. 02254.** Salary is negotiable depending on experience. *Affirmative Action/Equal Opportunity Employer. All qualified persons, including members of minorities and women, are encouraged to apply as soon as possible.*

BIOCHEMISTRY FACULTY POSITION

Indiana University School of Medicine, Department of Biochemistry, invites applications for the position of assistant professor of biochemistry, effective on or after 1 January 1982. Primary emphasis will be directed at appointing an outstanding individual. Some preference, however, may be given to applicants with interests in rapidly developing areas of biochemistry, such as the study of membrane function or molecular biology. Applicants must have exceptional postdoctoral experience and/or publications demonstrating productivity and originality in research. The successful candidate will have the background, commitment, and ability both to excel in the teaching of professional and graduate students and to develop a vigorous, independent research program. Please submit curriculum vitae, bibliography, and a short statement of future research goals by 15 June 1981, and arrange for letters of recommendation from three referees to be sent to: **Dr. P. J. Roach, Chairman, Search Committee, Department of Biochemistry, Indiana University School of Medicine, Indianapolis, Indiana 46223.** *Indiana University is an Equal Opportunity/Affirmative Action Employer, M/F.*

BIOCHEMISTRY—FACULTY POSITION. The Department of Biochemistry, State University of New York (SUNY) at Stony Brook, has two tenure-track positions available at the assistant professor level for January 1982. The successful applicants will have outstanding potential for research and a commitment to teaching. Applicants should send complete curriculum vitae with reprints, research interest, and names of three references to: **Dr. Masayori Inouye, Chairman, Search Committee, Department of Biochemistry, SUNY at Stony Brook, Stony Brook, N.Y. 11794.** Application deadline: 30 June 1981. *SUNY at Stony Brook is an Equal Opportunity/Affirmative Action Employer.*

BIOENGINEERING LASERS ROBOTICS

A major international research institute seeks highly qualified persons for per diem assignments designing and developing 2-day seminars within these general areas. Candidates should possess appropriate credentials and experience as well as the ability to communicate clearly to an audience of sophisticated professionals. Seminars would be offered nationally approximately every other month, although the frequency is flexible. Fee paid per teaching day, plus expenses. Forward résumé to: **Box 80, SCIENCE.**

DIRECTOR OF OPHTHALMOLOGICAL RESEARCH

Responsibilities include establishment of a research laboratory in the Department of Ophthalmology at the University of Cincinnati.

Qualifications include the Ph.D. degree; an established record of scientific productivity; an interest in teaching and collaboration with clinicians; credentials which would permit appointment as associate professor; and an interest in either vitreo-retinal physiology, neurophysiology of the visual system, or some aspect of the cornea.

Substantial startup funds are available. Reply to: **Joel G. Sacks, M.D., Professor and Director, Department of Ophthalmology, University of Cincinnati Medical Center, 231 Bethesda Avenue, Room 6004, Cincinnati, Ohio 45267.** Telephone: 513-872-5151.

The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer, M/F/H.

POSITIONS OPEN

SMITHSONIAN INSTITUTION BOTANIST

Position available after June 1981, for a **SYSTEMATIC BOTANIST** who would initially serve as chairperson of the Department of Botany for 5 years. Candidates must have a distinguished research record and a focused research program that will use and contribute to the collections of the U.S. National Herbarium. Managerial/supervisory experience and a proven ability to obtain financial support for research desirable. Salary: \$37,871 to \$50,112 (GS 14-15), depending upon qualifications and experience. Send curriculum vitae, statement of research interests and goals, letters from three references, recent reprints, and completed Form SF-171 (Federal Personal Qualifications Statement) to: **The Search Committee, Department of Botany, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.** Deadline for applications: 31 May 1981. *The Smithsonian Institution is an Equal Opportunity Employer.*

CHAIRPERSON, BIOCHEMISTRY. The State University of New York (SUNY), Upstate Medical Center, is seeking qualified candidates for chairperson of the Department of Biochemistry in the College of Medicine. The department is responsible for courses in the College of Medicine and the School of Graduate Studies. Candidates for the position must have the Ph.D., M.D., or equivalent degree. Significant teaching and research achievement is required. Experience in administration is desirable. Qualified candidates may submit curriculum vitae and bibliography to:

**I. M. Weiner
Chairman of the Search Committee
Department of Pharmacology
SUNY-Upstate Medical Center
766 Irving Avenue
Syracuse, New York 13210**

The State University of New York is an Affirmative Action/Equal Opportunity Employer.

ORAL BIOLOGY CHAIRPERSON—University of Nebraska Medical Center, College of Dentistry, 12-month, tenure-leading position primarily charged with the administration of the Department of Oral Biology, a multidisciplinary basic science department. Additional duties include teaching undergraduate and graduate dental students, and establishing an active research program. Ph.D. or equivalent in pharmacology, physiology, or microanatomy with a D.D.S./D.M.D. with license to practice dentistry in one of the 50 states is preferred. Candidates must have a record of administrative and teaching experience and have demonstrated the ability to conduct independent research and secure extramural funding. Candidates must have demonstrated scholarly achievements of a national scope, and have actively participated in appropriate professional associations. Academic rank and salary are commensurate with background, training, and experience. Application deadline is 1 June 1981. Starting date is 1 August 1981. Submit curriculum vitae to:

**Search Committee, Position Number 136
College of Dentistry, Room 100
University of Nebraska Medical Center
40th and Holdredge Streets
Lincoln, Neb. 68583
Telephone: 402-472-1340**

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

CHEMICAL OCEANOGRAPHER—Research associate, M.S., marine organic geochemistry and its relation to ocean productivity. Cooperative Institute of Marine and Atmospheric Sciences, University of Miami, and National Oceanic and Atmospheric Administration (NOAA). Contact: **Chairman, Search Committee, D. K. Atwood, NOAA/AOML, 15 Rick- enbacker Causeway, Miami, Florida 33149.**

ENTOMOLOGIST—IPM SYSTEMS. Professor with responsibilities for research and teaching in the area of integrated pest management (IPM) of insect pests of importance to Oregon agriculture, as well as leadership of interdisciplinary IPM working group. Ph.D. required with appropriate experience. Applications must be postmarked no later than 15 May 1981. For complete details, contact: **Dr. M. T. AliNiazee, Chairman, Search Committee, Department of Entomology, Oregon State University, Corvallis, Oregon 97331.** *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973. Applications from females and minorities are encouraged.*

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MARKETING CAREERS

Bethesda Research Laboratories (BRL) continues to undergo dramatic growth. To sustain this growth requires a talented marketing staff capable of flexibility and innovation in identifying opportunities and in communicating new areas of technology. If you have a strong science background and some sales or marketing experience you may be interested in the following positions.

VICE PRESIDENT SALES — Research Products Division

Senior sales executive, responsible for attainment of domestic and international sales goals for all BRL research products. Experience in sales management, business planning, formulation of policy and subsidiary management required.

TECHNICAL SERVICE MANAGER — Molecular Biology

Provides technical liaison between research laboratories, customers, and sales force. Requires well developed communication skills, oral and written. Strong background in nucleic acids enzymology. The technical "voice" for BRL research products.

PRODUCT MANAGER — Cell Biology/Immunology

Devise and execute strategies in the following areas: New product introductions, product differentiation, pricing, promotion, packaging, service and cost reductions. Proven success in product management, with field sales experience. Strong science background.

PRODUCT MANAGER — Apparatus & Instrumentation

Responsibilities include: New product ideas, forecasting and budgeting, pricing, advertising, product releases. Experienced product manager preferred. MBA with degree in sciences considered.

These are career positions for those interested in the challenges of industrial applications. We would welcome your inquiry or that of an associate or acquaintance.

Send your resume to:

Mr. Wayne E. Fowler
Personnel Director

**BETHESDA RESEARCH
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CHIEF OF PAEDIATRICS HEAD OF NEONATAL UNIT MOUNT SINAI HOSPITAL TORONTO, CANADA

Mount Sinai is a progressive 540-bed active-care teaching hospital affiliated with the University of Toronto. The Hospital's neonatal program, with its commitment to service, teaching and research, encompasses a 98-bed level I and level II nursery and a new 30-bed level III neonatal intensive care unit.

This unit, plus the Hospital's new 30-bed high-risk pregnancy unit, are major components of the newly established Metropolitan Toronto Regional Perinatal Program which includes the renowned Hospital for Sick Children. Mount Sinai has over 4,000 births per year, outnumbering any other hospital in the Province of Ontario.

This major position will require leadership ability and academic commitment. The successful applicant will be offered an appropriate academic appointment in the Department of Paediatrics, University of Toronto.

Interested parties are invited to send their curriculum vitae to the:

Executive Director
MOUNT SINAI HOSPITAL

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HOSPITAL



600 University Avenue
Toronto, Ontario
Canada M5G 1X5

**FACULTY POSITIONS OPEN
COLLEGE OF AGRICULTURE SCIENCES
AND FOODS**

**KING FAISAL UNIVERSITY
HOUFUF, SAUDI ARABIA
Academic Year 1981-1982**

The expanding College of Agricultural Sciences and Foods of King Faisal University invites inquiries from qualified applicants for the 1981-1982 academic year in the following fields:

| | |
|------------------------|--------------------------|
| Biology | Plant Pathology |
| Chemistry | Agricultural |
| Physics | Economics |
| Biochemistry | Animal Science |
| Agronomy | Animal Ecology |
| Horticulture | Dairy Science |
| Bee Keeping | Agricultural Engineering |
| Poultry Science | Water Resources and |
| Home Economics | Climatology |
| Agricultural Extension | Aquatic Wealth |

PREREQUISITES: Ph.D. or master's or equivalent degrees, practical and/or teaching experience. Knowledge of Arabic helpful, but not required.

Language of instruction is English.

Positions available September 1981: Interviews scheduled with the dean in Houston and London in April/May 1981.

SALARY RANGES (approximate annual U.S. dollars):

| |
|--|
| Professor—\$25,469 to \$33,965 |
| Associate professor—\$22,779 to \$28,973 |
| Assistant professor—\$18,750 to \$27,487 |
| Lecturer—\$11,611 to \$16,035 |

Salaries are paid monthly in Saudi riyals.

BENEFITS: Free furnished accommodations; substantial education allowance for up to four children. Air tickets to and from Saudi Arabia once per year for family of four. Sixty-day paid summer holiday, overweight allowance. No Saudi income tax. Contracts are for 1 year and renewable.

Send curriculum vitae with current telephone number, and the names, addresses, and telephone numbers of three references to: **Dr. Yahia Makki, Dean, College of Agricultural Sciences and Foods, King Faisal University, c/o Saudi Arabian Educational Mission, 2425 West Loop South, Houston, Texas 77027, OR c/o P.O. Box 2, Sudbury-on-Thames, Middlesex, TW16 5JP, England.**

POSITIONS OPEN

Position available: **DIRECTOR OF BACTERIOLOGY, MYCOLOGY AND PARASITOLOGY** in the Division of Clinical Microbiology, Department of Laboratory Medicine and Pathology, University of Minnesota Medical School.

Rank: ASSOCIATE PROFESSOR, tenured M.D. or Ph.D. who is Board-eligible for clinical pathology, internal medicine, pediatrics, or the American Board of Medical Microbiology. Minimum of 4 years of faculty experience, at least 2 of which must be as a director or assistant director of infectious disease or clinical microbiology. Independent research program in clinical and/or basic microbiology and an established record of scientific publications. Curriculum vitae must be sent by 1 June 1981 to: **Dr. Henry H. Balfour, Jr., Box 437 Mayo, University of Minnesota Hospitals, Minneapolis, Minn. 55455.** Salary negotiable. *The University of Minnesota is an Affirmative Action Employer and specifically invites and encourages applications from women and minorities.*

DIRECTOR OF LABORATORY MEDICINE

Pitt County Memorial Hospital, Greenville, North Carolina, is seeking a full-time Director of Laboratory Medicine. The hospital is the primary teaching facility for the East Carolina University Medical School, serving a large, local population and a rapidly expanding tertiary referral area. The hospital is county-owned, 3½ years old, and will contain 570 beds when a new bed tower is completed in 1982. The director is responsible for administration and day-to-day operation of the clinical laboratory services of the hospital and is expected to actively participate in clinical practice in his/her area of expertise. The director will also be responsible for coordinating, in conjunction with the chairman of the Department of Pathology, training of resident physicians and other health care personnel. He/she must be acceptable for academic appointment in the School of Medicine and must be Board-certified in pathology. Experience in laboratory administration, clinical practice, and teaching is highly desirable.

East Carolina University School of Medicine is a fully accredited, 4-year medical school and is a constituent institution of the Greater University of North Carolina. *Pitt County Memorial Hospital is an Affirmative Action/Equal Opportunity Employer.*

Letters of application with curriculum vitae should be directed to:

**Chairman, Pathology Search Committee
c/o Administration
Pitt County Memorial Hospital
P.O. Box 6028
Greenville, North Carolina 27834**

FACULTY POSITION. We are seeking an outstanding research investigator whose program involves either biogenesis of membranes or the role of membranes in differentiation. Departmental research is focused around membranes and membrane-related phenomena. Position will be available 1 July 1981. The salary is competitive. Send curriculum vitae, bibliography, and names of references to: **Dr. Martin Morrison, Department of Biochemistry, St. Jude Children's Research Hospital, P.O. Box 318, Memphis, Tennessee 38101.**

Equal Opportunity Employer

SRI INTERNATIONAL, on the San Francisco Peninsula, has a new position for a **GROUP LEADER IN RECEPTOR PHARMACOLOGY**. You must have demonstrated research interests and experience in molecular and biochemical aspects of receptor structure and function, as well as ability to set up an independent laboratory and manage a research group. Candidates should have proven publications record. Ability to work in interdisciplinary environments desirable. Ph.D./pharmacology or biochemistry, and 2 to 3 years of postdoctoral experience required. Send résumé to: **G. L. Solomon, SRI INTERNATIONAL, 333 Ravenswood Avenue, Menlo Park, Calif. 94025.** *An Equal Opportunity Employer.*

INSTRUCTOR, BIOLOGY. Full-time, tenure-track position in botany. Master's degree and significant work toward the Ph.D. in botany, emphasis in plant systematics. Teach field botany, plant physiology, general botany, environmental science. Knowledge of Pacific Northwest flora preferred. Send résumé, three letters of reference, transcripts, and letter of interest. Placement dossier acceptable. Postmark deadline: 24 April 1981. Contact: **Rose Song, Secretary to the Academic Dean, Linfield College, McMinnville, Oregon 97128.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FACULTY POSITION

The Department of Radiation Biology and Biophysics of the University of Rochester has a tenure-track position at the assistant professor level for an individual having a productive research program in microcirculation physiology/biophysics. Desired areas of interest: regulation of flow in vivo model systems; computer simulation of microvascular systems; oxygen delivery to tissue. Send a summary of plans for long-term development of research program and curriculum vitae, and arrange to have three reference letters forwarded by 6 May 1981 to:

**Dr. Paul L. La Celle
Department of Radiation Biology and Biophysics
University of Rochester
School of Medicine and Dentistry
Rochester, N.Y. 14642**

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

INSECT TOXICOLOGIST. Tenure-track position for an insect toxicologist with specialization in the mode of action, selectivity, and comparative metabolism of chemicals in pest and nontarget species. Available 1 September 1981. A Ph.D. or equivalent degree, with strong background in entomology and research training in toxicology and biochemistry/physiology is required. Appointment at the assistant professor level, 11-month position; 90 percent research, 10 percent teaching. Activities include development of research program, supervision of graduate students, and course instruction. Submit curriculum vitae, transcripts of all university work, reprints, and names and addresses of four referees to: **G. P. Georgiou, Search Committee Chairman, Division of Toxicology and Physiology, Department of Entomology, University of California, Riverside, Calif. 92521.** Applications accepted until 1 June 1981 or until a suitable candidate is selected. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

INSTRUCTOR

Instructor in cell biology in a university environment is available. Required is a Ph.D. in biochemistry with training in induction of protein and tRNA by estradiol in avian liver. At least 2 years of postdoctoral experience in enzymes affecting DNA is required. Duties include teaching cell biology in a medical curriculum and the graduate school; directing research in the area of effects of estradiol on gene expression in chick liver and induction of vitellogenin and tRNA. The candidate must be familiar with this type of research in chick livers. Equipment operated includes lipid scintillation ultracentrifuge, gamma counter, and gel electrophoresis. Full-time position; \$16,000 per annum. Submit curriculum vitae, three letters of recommendation, and list of publications to: **Ohio Job Service, 9216 Superior Avenue, Cleveland, Ohio 44106.** *An Equal Opportunity/Affirmative Action Employer.*

Rank of INSTRUCTOR or RESEARCH ASSOCIATE. The project to be undertaken will be the characterization of hybrid cell cultures known to be producing antibodies directed against small cell carcinoma of the lung. Send résumé and three letters of recommendation to: **Box B175, Department of Microbiology/Immunology, School of Medicine, University of Colorado, 4200 East Ninth Avenue, Denver, Colo. 80262.** *The University of Colorado is an Equal Opportunity Employer.*

MICROBIOLOGIST

Microbiologists interested in molecular aspects of regulation are invited to apply for a tenure-track faculty position. We are seeking an individual who will develop an active program in a department committed to research excellence. Rank and salary are open. Send curriculum vitae, copies of relevant publications, and names of three references to: **Dr. David Njus, Department of Biological Sciences, Wayne State University, Detroit, Michigan 48202.** *An Equal Opportunity/Affirmative Action Employer.*

MOLECULAR PARASITOLOGY

Postdoctoral position available for recent Ph.D. with experience in recombinant DNA technology and biochemistry to study the molecular aspects of surface antigen expression in African trypanosomes and *Leishmania*. Please send curriculum vitae and three references to: **Dr. Nina Agabian, Department of Biochemistry SJ-70, University of Washington, Seattle, Wash. 98195.**

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Representatives for fast growing company in the field of biotechnology. Establish rapport with research biochemists on a technical basis and provide information and products to solve methods and applications problems.

Territories are now available in the North East, Mid-Atlantic, Mid-West, Southern California and Japan.

Prefer experience in the sale of biological research products or M.S./Ph.D. in Biochemistry with current knowledge of molecular biology.

Good base salary, commission and company car.

Send resume to:

**Mr. Wayne E. Fowler
Personnel Director**

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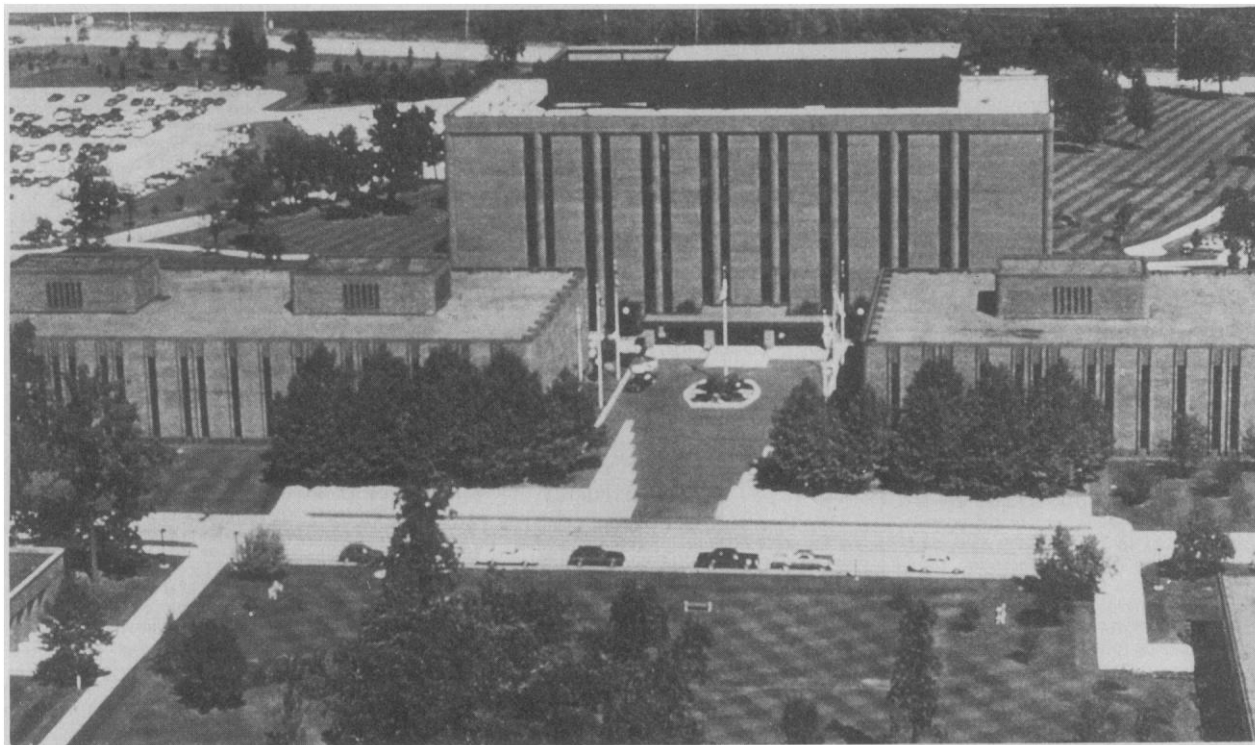
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Scientists who are interested in the challenge of advanced research in the health care industry are invited to consider the opportunities available at Abbott Laboratories.

In 1980, Abbott continued a longstanding record of scientific achievement. Advances in pharmaceutical research have brought two promising drugs for the treatment of hypertension to the final stages of clinical trials. Abbott also announced the successful biological engineering of a bacteria to produce urokinase, an enzyme that dissolves blood clots. It was the first human enzyme to be cloned by recombinant DNA techniques.

Our research in the diagnostics area has resulted in the introduction of several new products in the past year. Our commitment to leadership in diagnostics is evidenced in on-going work toward the development of new products for the detection of cancer, heart disease, hepatitis, rubella and many other major diseases.

In 1981, Abbott intends to actively continue its strong commitment to research of medical importance. Attracting talented scientists will be a vital element in the success of our efforts. The positions listed below are indicative of some of our current needs.

MOLECULAR BIOLOGIST

Exceptional opportunity to join our Recombinant DNA Research Team. Position involves the use of cloning and sequencing techniques. Qualified candidate should have a Ph.D. in Molecular Biology or related field. Experience with protein isolation and radioimmuno assays is highly desirable.

IMMUNOLOGIST

Position involves the development of an EIA assay for a new diagnostic test. Qualified candidates should have a Ph.D. in Immunology or Microbiology with experience in separation of macromolecules and purification of antigens and antibodies.

BIOCHEMISTS

Positions available in our diagnostic division in both technical support and R&D groups. Technical support openings involve troubleshooting and improvement of existing products as well as transfer of technology from R&D to manufacturing. R&D positions involve the development of solid phase assays. Qualified candidates should have a Ph.D. with immunoassay and protein chemistry experience. Previous industrial experience is strongly preferred for these openings.

CELL BIOLOGIST – HYBRIDOMA RESEARCH

Excellent opportunity to assume major role in the development of in-vitro antibody laboratory which will provide for division-wide monoclonal antibody needs.

MICROBIOLOGIST/PHARMACEUTICALS

Develop appropriate methodology for the in-vitro evaluation of antimicrobial compounds. Position requires a Ph.D. in Microbiology with strong biochemistry background. Experience with pathogenic organisms and antibiotic resistance desirable.

ASSISTANT ORGANIC CHEMIST

Position involves work on organic synthesis projects. Qualified candidates should have B.S. or M.S. in chemistry with ability to interpret IR, NMR spectra.

Abbott is headquartered in a pleasant northern suburb of Chicago and we offer an attractive salary and benefits package that includes cash profit sharing, relocation assistance, and stock retirement program. For an outstanding opportunity, send a resume with earnings history, in complete confidence to:

Chris Gude, Corporate Placement

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BIOTECHNOLOGY

GENEX CORPORATION has several positions available for superior scientists and engineers. GENEX is engaged in applying newly developed recombinant DNA techniques to problems of commercial and industrial importance. Candidates selected for these positions will join a rapidly growing, innovative organization. Positions immediately available include:

- **Senior Immobilization Scientist:** Ph.D., plus several years of experience. Expertise in whole cell and enzyme immobilization required.
- **Immobilization Scientist:** Ph.D. Will consider an outstanding individual holding a less advanced degree combined with experience in whole cell and enzyme immobilization.
- **Senior Biochemical Engineer:** Ph.D. Expertise in biochemical and fermentation process development.
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GENEX offers a unique R&D environment and competitive compensation and fringe benefits. Applicants should send curriculum vitae, pertinent reprints, and a list of references to:

Personnel Administrator
GENEX CORPORATION
6110 Executive Blvd.
Suite 680
Rockville, MD 20852

Genex Corporation is an Equal Opportunity Employer.

POSITIONS OPEN

Nontenured **INSTRUCTOR** position in microbiology/immunology. Master's degree required; teaching experience desired. Responsibilities will involve some teaching duties in immunology to medical and graduate students, and research in macrophage activation and tumor cell killing. Should have knowledge and experience in macrophage activation pathways and the appropriate assay systems, as well as a good familiarity with arginine biochemistry. Send résumé and three letters of recommendation to: **Box C321, Webb Waring Institute, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, Colo. 80262. The University of Colorado is an Equal Opportunity Employer.**

LABORATORY INVESTIGATOR POSITION. Department of Physiology. For research, using a variety of mammals, including subhuman primates, in respiratory and pulmonary pathophysiology. Must have experience in handling isolated airway smooth muscle preparations and familiarity with setting up isolated pulmonary vessels. Demonstrated experience required in above. Degree of D.V.M. would be a plus; Ph.D. or M.D. required. Full-time; salary: \$15,000 to \$20,000, commensurate with experience. Send résumé to: **Dr. B. Altura, Box 31, STATE UNIVERSITY OF NEW YORK/DOWNSTATE MEDICAL CENTER, 450 Clarkson Avenue, Brooklyn, N.Y. 11203, or telephone: 212-270-2616. Equal Opportunity/Affirmative Action Employer.**

MATERIALS POLICY

The Department of Engineering and Public Policy at Carnegie-Mellon University announces the addition of a new research focus in materials policy. The department offers an interdisciplinary, research oriented Ph.D. for persons with an undergraduate degree in engineering or the mathematical or physical sciences. A joint Ph.D. with the Department of Metallurgy and Materials Science can also be arranged. Persons with interest in materials supplies, reserves, and availability; stockpiling; extraction, refining and process technology; material substitution; process redesign; or materials recycling are especially welcome. Some financial support is available. Contact:

Dr. Indira Nair
Department of Engineering and Public Policy
Carnegie-Mellon University
Pittsburgh, Pa. 15213

MEDICAL ONCOLOGIST sought to join staff of active Oncology Department, part of collaborative, comprehensive Cancer Center at McGill University. Applicant should have basic science interests in a related field, and be prepared to spend about 50 percent of his/her time in clinical activities. Appointment is hospital and university based. Laboratory facilities available in Research Institute at hospital. Write to:

Director
Department of Oncology
c/o Jewish General Hospital
6th Floor West
3755 Cote St. Catherine Road
Montreal, Quebec, Canada H3T 1E2

MICROBIOLOGY FACULTY

Applications are invited for two faculty positions available 1 July 1981. Applicants must have the Ph.D. or equivalent degree. One position requires teaching experience in medical virology and an additional area of microbiology. The second position requires a broad-based teaching competency in medical microbiology. Research interests are open. Rank and salary dependent upon qualifications and experience. Teaching responsibilities may involve both medical and physician's assistant training programs. Send curriculum vitae and names of three references to: **William J. Dyche, Ph.D., Assistant Dean for Pre-Clinical Affairs, College of Osteopathic Medicine and Surgery, 3200 Grand Avenue, Des Moines, Iowa 50312. Equal Opportunity Employer.**

DEPARTMENT OF BIOLOGY YORK UNIVERSITY MOLECULAR GENETICIST

A vacancy exists at the level of assistant, associate, or full professor for a tenure-track appointment in the field of molecular genetics. We are seeking candidates with a record of, or potential for, excellence in research. Experience with recombinant DNA technology is an asset. The availability of the appointment is subject to final University approval. Applications with the names of three referees should be sent to: **Chairman, Department of Biology, York University, Downsview, Ontario, Canada M3J 1P3, before 31 August 1981.**

POSITIONS OPEN

MICROBIOLOGIST: Faculty position. The Faculty of Biological Sciences, School of Science and Technology, **SOUTHERN ILLINOIS UNIVERSITY, EDWARDSVILLE**, anticipates an appointment at the assistant professor level, available September 1981. Rank may be negotiable, depending upon experience. Duties will include participation in teaching undergraduate microbiology courses, cell biology, and a graduate course in the area of the candidate's specialization. Candidates will be expected to carry out an active research program and to seek outside research funding. Candidates with a research specialization in virology are especially sought; however, those with other areas of specialization will be definitely considered. Qualifications include a doctoral degree in microbiology or a closely related area, and research or postdoctoral experience. Teaching experience will be considered valuable. Closing date for applications is 31 May 1981. Please submit curriculum vitae, three letters of recommendation, copies of recent publications, and a summary of future research plans to:

Dr. Paul Goldenbaum
Chairman, Microbiologist Search Committee
Faculty of Biological Sciences
Southern Illinois University
Edwardsville, Illinois 62026

Southern Illinois University, Edwardsville, is located in a rural setting, 25 minutes from downtown St. Louis. The campus occupies 2600 acres and has an enrollment of about 10,000 students. The Biology Department has a faculty of 17 members and confers bachelor's and master's degrees. The Biology Department is a unit of the School of Science and Technology and our faculty has the opportunity to interact with programs in the other natural sciences, mathematics, and engineering. *An Affirmative Action/Equal Opportunity Employer.*

TENURE-TRACK POSITION DEPARTMENT OF MINERAL ECONOMICS THE PENNSYLVANIA STATE UNIVERSITY

Applicants are sought for a tenure-track position at the full, associate, or assistant professor level in the Department of Mineral Economics, The Pennsylvania State University. The position will be filled for the academic year 1982-1983. Applicants must have a Ph.D. in economics, geological sciences, material sciences, operations research engineering, geostatistics, management sciences, finance or resource economics, with a demonstrated interest in applying their professional knowledge to the study of mineral resources and industries. Applicants at the higher levels must have demonstrated research potentials appropriate to the faculty rank. The Department of Mineral Economics offers B.S., M.S., and Ph.D. degrees in mineral economics and has an interdisciplinary faculty. The salaries at each level are competitive. Please send résumé and example of published papers no later than 30 October 1981 to: **Dr. William A. Vogely, Head, Department of Mineral Economics, 220S Walker Building, The Pennsylvania State University, University Park, Pa. 16802.**

An Equal Opportunity/Affirmative Action Employer

NEUROCHEMIST—Assistant professor of biology with research interests in mechanisms of chemical neurotransmission. Particular consideration given to individuals who could contribute to research efforts in the area of reproductive neuroendocrinology. The individual would be expected to teach in the area of neurochemistry/neuroscience. Send curriculum vitae, a brief statement of research interests, and names of three references to: **Search Committee, Department of Biology, Livingston College, Rutgers University, New Brunswick, New Jersey 08903. Rutgers is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION to engage in studies of the genetic control of cyclic nucleotide metabolism in *Drosophila* is currently open (starting date flexible). Applicants should have experience in one or more of the following areas—monoclonal antibodies, DNA cloning, enzymology, and protein purification—and desire to learn more about the genetics of *Drosophila*. Initial appointment is for a term of 1 year but is renewable, depending upon performance, for an additional 1 to 4 years. Salary commensurate with qualifications. Send curriculum vitae to, and request three letters of recommendation be sent to: **Dr. John A. Kiger, Jr., Department of Genetics, University of California at Davis, Davis, Calif. 95616.**

The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.

Staff Toxicologist

Major division of top Fortune 50 firm has an expansion created opening for an experienced Toxicologist to assume challenging responsibilities in our **PISCATAWAY, NEW JERSEY FACILITY**. Major responsibilities include the maintenance of a toxicology information center, preparation/review of health hazard information statements, conducting literature searches on all new and existing products as required, and assisting in the design, contracting and monitoring of toxicity testing performed with private labs, research institutes, etc.

The successful applicant should have a minimum of 5 years "hands-on" toxicology experience, preferably at a contract laboratory, and BS/MS in toxicology or related area. We offer a salary commensurate with experience, opportunity for future professional growth and an extremely liberal non-contributory benefits package.

Qualified candidates are requested to submit resume including work background and salary history to: Manager of Staffing, Department 02.

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men and women



SCIENTISTS (2 positions)

Environment Canada
Canadian Forestry Service
Chalk River, Ontario

The Canadian Forestry Service of Environment Canada requires two scientists. These scientists will provide significant contributions to the management of the forests of Canada.

FOREST ECOLOGIST — FIRE Research Scientist

Salary: \$21,445 — \$39,889
Reference No.: 81-NCRSO-DOE-4

The Petawawa National Forestry Institute at Chalk River, Ontario requires a research scientist to investigate the role of fire in the ecology of various forest types in Canada. The scientist will plan and execute a program of research on the ecological consequences of various kinds of fire management, ways of predicting the consequences of fire under given conditions, and the use of prescribed fire in forest management. The designing and supervision of R and D contracts, and the provision of consulting services on ecological matters related to fire (and its control and use) to federal and provincial and industrial agencies is a requirement of this position. Prospective candidates will have graduated from a recognized university with a degree in forestry or ecology.

Qualifications

For the research scientist described above, graduation with a doctorate degree in scientific fields and specialties related to the position is required. A masters or bachelors is acceptable if it is coupled with research in which the capability has been demonstrated to do personal research equivalent required for a doctorate degree.

Knowledge of English is essential.

Clearance No.: 400-365-034

FOREST PHYSICAL SCIENTIST

Salary: \$25,631 — \$30,911
Reference No.: 81-NCRSO-DOE-5

The Petawawa National Forestry Institute at Chalk River, Ontario requires a physical scientist to undertake a program of research into meteorological influences on forest fire incidence and behaviour. To fulfill the duties of this position the scientist will require a knowledge of modern high-speed computing devices and numerical modelling; knowledge of atmospheric science and the ability to plan, coordinate and conduct field and laboratory experiments.

Qualifications

For the physical scientist position described above a bachelors degree in meteorology or a related field is required. Knowledge of forestry and electronics would be an asset.

Knowledge of English is essential.

Clearance No.: 400-365-033

Additional job information is available by writing to the address below:

Toute information relative à ce concours est disponible en français et peut être obtenue en écrivant à l'adresse suivante.

How to apply

Send your application and/or résumé to:

Mr. K.E. Lewis
National Capital Region Staffing Office
Public Service Commission of Canada
L'Esplanade Laurier, West Tower
300 Laurier Avenue West
Ottawa, Ontario K1A 0M7
Closing Date: April 30, 1981

Please quote the applicable reference number at all times.

Canada

POSITIONS OPEN

NEUROCHEMIST OR NEUROBIOLOGIST. research position at postdoctoral level, available 1 July 1981, for purification and characterization of growth factors and related proteins from the brain in collaboration with Dr. Ramon Lim in a Division of Neurochemistry. Prefer background in protein chemistry, neurobiology, or cell biology. Send curriculum vitae, résumé, and names of three references to:

Dr. M. W. Van Allen
Department of Neurology
University of Iowa College of Medicine
Iowa City, Iowa 52242

The University of Iowa College of Medicine is an Equal Opportunity/Affirmative Action Employer.

PALEOBOTANIST

The Department of Biology of Harvard University is seeking qualified applicants for the position of assistant professor of biology and assistant curator of paleobotany. Candidates in any area of paleobotany will be considered. Candidates must have a strong commitment to research. Duties include the development of an independent research program, teaching at the undergraduate and graduate level, and assisting in curation of a large collection of plant fossils. Salary range for the 1981-1982 academic years, assistant professor: \$20,600 to \$24,000; associate professor: \$23,800 to \$27,200. Please send curriculum vitae, description of research and teaching interest, and the names and addresses of three references to:

Professor Otto T. Solbrig
Gray Herbarium, Harvard University
22 Divinity Avenue
Cambridge, Mass. 02138

Deadline: 1 May 1981.

Harvard University is an Equal Opportunity/Affirmative Action Employer.

PHYSIOLOGICAL PLANT ECOLOGY. Two-year postdoctoral appointment: effects of acid precipitation on lichen photosynthesis and respiration, modeling lichen productivity. Submit curriculum vitae, statement of research interests, and three letters of reference by 10 May 1981 to: **Dr. Martin Lechowicz**, Department of Biology, McGill University, 1205 Avenue Docteur Penfield, Montreal, Quebec, Canada H3A 1B1.

POSTDOCTORAL - BIOPHYSICAL - BIOINORGANIC Ph.D. with biochemical or biophysical training and interest in metal ion-protein interaction. Application of new laser spectroscopic methods and lanthanide ion luminescence to probe calcium-binding proteins and nucleic acids [see *Science* 206, 1194 (1979); *J. Am. Chem. Soc.* 101, 334 (1979); *ibid.* 102, 3650 (1980)]. Position available immediately. Send curriculum vitae and letters of recommendation by 30 April to: **Professor William DeW. Horrocks, Jr.**, 152 Davey Laboratory, Department of Chemistry, The Pennsylvania State University, University Park, Pa. 16802. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available in late spring to conduct research in the area of phosphorylation [*Nature (London)* 287, 241 (1980)] events in transformed cell membranes. Another laboratory interest is in the binding of ligands to the cell surface as a model for hormonal interactions [*J. Biol. Chem.* 254, 1932 (1979)]. Up to 2 years of support with possible extension. Send curriculum vitae and references to: **Julius Gordon**, Professor in Pathology, University of Colorado Health Science Center, 4200 East Ninth Avenue, Box B216, Denver, Colo. 80262.

POSTDOCTORAL POSITION available in laboratory investigating T cell recognition of mouse cells transformed by oncogenic viruses. Applicant with experience in the general areas of membrane biochemistry or cellular immunology preferred. Please send curriculum vitae and three letters of reference to: **Dr. Linda R. Gooding**, Department of Microbiology and Immunology, Emory University School of Medicine, Atlanta, Georgia 30322.

University of California, San Francisco, Department of Pharmacology, two **POSTDOCTORAL POSITIONS** available April 1981. Major area of emphasis: electropharmacology. Previous experience in voltage clamping desirable. Submit curriculum vitae to: **Dr. B. G. Katzung** or **Dr. L. M. Hondeghe**, Department of Pharmacology, University of California, San Francisco, San Francisco, Calif. 94143, preferably before 30 April 1981. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION is available immediately to study the use of biologically active peptides as drug carriers in the melanoma cell system. Research training includes the synthesis of peptide-toxin conjugates and studying their effects on cells in vitro and in vivo. Background in protein/peptide chemistry and tissue culturing is desired. Send curriculum vitae, graduate transcripts, and three letters of recommendation to: **Dr. Janos Varga**, c/o Aaron B. Lerner, M.D., Chairman, Department of Dermatology, Yale University School of Medicine, P.O. Box 3333, New Haven, Conn. 06510.

POSTDOCTORAL POSITIONS IN PHARMACOLOGY. Candidates with recent Ph.D. in pharmacology or related fields with interest in neuropsychopharmacology or cardiovascular pharmacology at whole animal and/or cellular levels should submit résumé with names of three references to: **Dr. Harbans Lal**, Chairman, Department of Pharmacology, Texas College of Osteopathic Medicine, Camp Bowie at Montgomery, Fort Worth, Texas 76107. *An Equal Opportunity/Affirmative Action Employer.*

THE JACKSON LABORATORY BAR HARBOR, MAINE

Applications are invited for **POSTDOCTORAL POSITIONS** in cancer biology, mammalian genetics, or reproductive biology and development. Candidates must be U.S. citizens or have a permanent residence visa. Preference given to recent recipients of the Ph.D., M.D., or D.V.M. degree. Send curriculum vitae, statement of research interests, and names of three references to: **Dr. Henry C. Outzen**, Assistant Director (Training), The Jackson Laboratory, Bar Harbor, Maine 04609.

POSTDOCTORAL POSITION. Seeking Ph.D. associate with interest in membrane biochemistry. Opening fall 1981. Studying H⁺-ATPase pump of *E. coli*. Focus on structure and topology of subunits intrinsic to membrane, and mechanism of H⁺ translocation. Training in protein chemistry, membrane reconstitution, bacterial genetics, or recombinant DNA methods applicable. Contact: **Dr. Robert H. Fillingame**, Department of Physiological Chemistry, University of Wisconsin, Madison, Wis. 53706. *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS in experimental parasitology. Postdoctoral positions are available at Michigan State University for applicants with interests in a variety of aspects of experimental parasitology. Participating faculty members from the Colleges of Human Medicine, Veterinary Medicine, Osteopathic Medicine, and Natural Science have active research programs in immunology, immunopathology, biochemistry, physiology, and pharmacology of schistosomiasis, malaria, onchocerciasis and trypanosomiasis, and in the biology of simuliid vectors. Interdisciplinary projects and experiences are encouraged, and willingness to work in tropical areas may be an advantage. Applications are invited from persons with Ph.D., D.V.M., M.D., or D.O. degrees. Send curriculum vitae and names and addresses of two references to: **Dr. Jeffrey F. Williams**, Parasitology Research Group, A-22 Veterinary Clinical Center, Michigan State University, East Lansing, Mich. 48824. *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION. Begin summer 1981. Area of study involves research on chemical and electrochemical oxidation of organic compounds. Applicants should have Ph.D. in chemistry with expertise in synthetic organic chemistry or electrochemistry. Initial appointment is for 1 year, but may be extended upon mutual consent. Minimum salary: \$12,000; maximum: \$14,000. Apply by 1 May (or until suitable candidate is found thereafter) with résumé and letters of recommendation to: **Dr. Henry E. Baumgarten**, Department of Chemistry, The University of Nebraska-Lincoln, Lincoln, Nebraska 68588.

RESEARCH GEOLOGIST. Faculty-level position within the Conservation and Survey Division, The University of Nebraska-Lincoln, responsible for stratigraphic and sedimentologic studies on the Cenozoic and Mesozoic, scientific research, and educational activities. Affiliated with state Geological Survey. Master's minimum. Ph.D. and experience related to mineral resources preferred. Résumé and three letters of reference by 15 May to: **R. R. Burchett**, The University of Nebraska-Lincoln, 113 Nebraska Hall, Lincoln, Nebraska 68588. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION

Postdoctoral position (2- to 3-year duration) is available immediately to study the modifications and processing of avian retrovirus RNA. Experience in modern methods of molecular biology is desirable. Salary range: \$13,380 to \$15,000. Send curriculum vitae and names of three references to:

Dr. C. Martin Stoltzfus
Department of Microbiology
University of Iowa
Iowa City, Iowa 52242

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

POSTDOCTORAL POSITIONS available in eukaryotic gene regulatory systems. Systems available include mammalian serum protein genes as albumin, interferon and lymphokines, and yeast nuclear genes. Send curriculum vitae and names of three references to: **Dr. J. Sanders Sevall**, Department of Molecular Genetics, Wadley Institutes of Molecular Medicine, 9000 Harry Hines Boulevard, Dallas, Texas 75235.

The Wadley Institutes is an Equal Opportunity Employer, M/F.

POSTDOCTORAL RESEARCH APPOINTMENT

Available 1 July 1981 for a Ph.D. with background in nucleic acid biochemistry. Knowledge of molecular cloning, fingerprint analysis, and nucleic acid sequences desirable. Research will involve investigation of hnRNA and snRNA in nuclear matrix and the role of nuclear proteins in hnRNA-snRNA interaction. Send curriculum vitae and three references to: **A. O. Pogo, M.D.**, Head, Laboratory of Cell Biology, The Kimball Research Institute of THE NEW YORK BLOOD CENTER, 310 East 67 Street, New York, N.Y. 10021. *An Equal Opportunity Employer, M/F.*

POSTDOCTORAL RESEARCH ASSOCIATE to study the mechanisms of action of grass herbicides including translocation, metabolism, membrane effects, and plant hormone related cellular activities. Ph.D. in biochemistry, plant physiology, or related field required. Application deadline: 30 April 1981. Send curriculum vitae and names of three references to: **Dr. Donald Galitz**, Department of Botany, North Dakota State University, State University Station, Fargo, N.D. 58105. *North Dakota State University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE

A position is available to study the molecular biology of control of DNA replication using plasmids as model system. The approach utilizes the tools of recombinant DNA technology. A background in nucleic acid biochemistry and genetics is helpful. Send names of references and curriculum vitae to: **Dr. Barry Polisky**, Program in Molecular, Cellular, and Developmental Biology, Department of Biology, Indiana University, Bloomington, Indiana 47405.

POSTDOCTORAL RESEARCH ASSOCIATE

Available June 1981 in the laboratory of Dr. Eliahu Caspi to work in the area of biosynthesis of polyprenoids in different biological systems. Please submit résumé and three letters of reference to:

Personnel Office
Worcester Foundation for Experimental Biology
222 Maple Avenue
Shrewsbury, Mass. 01545

An Equal Opportunity/Affirmative Action Employer

Title: POSTGRADUATE RESEARCH BIOCHEMIST.

Responsibilities: To work with principal investigator on biochemical reactions of folic acid and vitamin B₁₂.

Qualifications: A Ph.D. and experience in general biochemical work and enzymatic assays. Previous experience in the folic acid field is desirable.

Salary range: \$15,916 to \$18,732 per annum, depending on experience and qualifications.

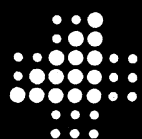
Position available: 1 June 1981. This is a regular position to be funded from National Institutes of Health grant. Funding guaranteed through grant period of 3 years.

Application deadline: 30 May 1981.

Apply to: **Dr. E. R. L. Stokstad**, Department of Nutritional Sciences, 131 Morgan Hall, University of California, Berkeley, California 94720. Telephone: 415-642-1038.

The University of California is an Affirmative Action Employer.

Research Associate/Assistant



American Critical Care, the pharmaceutical division of American Hospital Supply Corporation, is seeking a Research Associate/Assistant to join a team engaged in the discovery and evaluation of agents for use in the treatment of arrhythmias and myocardial infarction.

This position requires a BS/MS in medical/biological sciences or equivalent experience in pharmacological research. The ideal candidate will also have at least 1-3 years experience in cardiovascular pharmacology as well as experience and interest in on-line data acquisition and analysis.

Our R&D area is responsible for the development of sophisticated critical care medicine with emphasis on cardiovascular. Our state-of-the-art lab facilities are well-funded and continuously expanding. If you are qualified for this position and are looking for a healthy, progressive work environment, please send resume to:

Personnel Manager—Dept. RAA

American Critical Care

A division of
American Hospital Supply Corporation
1600 Waukegan Road
McGaw Park IL USA 60085

We are an equal opportunity employer m/f

Province of Newfoundland,
Newfoundland Cancer Treatment
and Research Foundation

The Faculty of Medicine,
Memorial University of
Newfoundland

Applications are invited for the position of:

ASSOCIATE/ASSISTANT PROFESSOR AND RESEARCH SCIENTIST IN THE NEWFOUNDLAND CANCER CLINIC

This is a new scientific research position open to a scientist with experience of clinically oriented research in human solid tumours, particularly lung cancer. The appointment will be held jointly in the Newfoundland Cancer Clinic and the Medical School of Memorial University.

The position would be suitable for a scientist with training and experience in a biological discipline together with several years post-doctoral experience including responsibility for the direction of an oncology research group. It is anticipated that the oncology group will develop a programme of research into human tumour associated antigens, targeting of cancer therapy and clinical and laboratory aspects of lung cancer.

As a member of the oncology group the successful candidate will be expected to assist in the development of tumour study groups and the design of clinical and laboratory protocols for the investigation of solid tumours.

An active interest in teaching programmes in clinical oncology and supervision of elective and post-graduate research projects will be encouraged.

Salary and academic rank will be commensurate with experience.

Enquiries should be addressed to:

Dr. Christopher Newman
Newfoundland Cancer Treatment and Research Foundation
25 Kenmount Road
St. John's, Newfoundland
Canada A1B 1W1

PHARMACOLOGY RENAL

Expanding group has openings at all levels of training (BS, MS, PhD) in biology, pharmacology or physiology. Demonstrated competence should relate to evaluation of novel diuretics and/or antihypertensive agents.

One position will entail competence in techniques of ion and water transport in urinary bladders, corneas of amphibia, and/or erythrocytes.

PhD will join as Post-Doctoral Fellow for two-year appointment, with opportunity for independent research, to publish results, and promotion to permanent staff at senior level.

Campus setting, 25 miles south of Philadelphia, within walking distance or short commute of choice residential communities. Competitive salaries/benefits include deferred tax-sheltered investment program. Please submit detailed CV in confidence stating position applied for and salary expectations. Principals only.

C. T. Brodigan, Employee Relations



ICI Americas Inc.

Wilmington, Delaware 19897

An Equal Opportunity Employer M/F

Technical Librarian

The Lovelace Inhalation Toxicology Research Institute, a non-profit biomedical and environmental research laboratory in the popular Southwest, seeks a professional Technical Librarian to manage its library containing 10,000 volumes and 485 active journal subscriptions. The library is a well-designed and equipped facility with computer-assisted cataloging and reference services. Extensive use is made of the external, computerized reference bases such as MEDLINE and TOXLINE as well as use of excellent local and regional technical library resources.

The successful candidate will have a Masters degree in Library Science with at least 4 years of post-graduate library experience, 2 of which must include supervisory responsibilities. Biomedical, environmental or other technical library experience is essential. The individual we seek will be a highly motivated Librarian capable of providing state-of-the-art technical services for a multi-disciplinary biomedical and environmental research institute with a staff of 250 individuals including 60 doctoral-degreed scientists. The research program is concerned with developing a better understanding of the impact of developing energy technology on man and the environment.

If you are interested in being considered for this challenging and demanding position, please submit your resume to: Personnel Manager, Lovelace Inhalation Toxicology Research Institute, P.O. Box 5890, Albuquerque, NM 87115, or call (505) 844-9431. Applications accepted through May 15, 1981.

We are an Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATES

Two positions available immediately for biophysical/lipoproteins: (i) to utilize biophysical methods (x-ray/neutron diffraction, NMR, calorimetry) to investigate lipid structure and lipid protein interactions; and (ii) to utilize biochemical/chemical methods for labeling membrane lipids and proteins. A doctorate in biochemistry, biophysics, or related area is required. Candidates should send curriculum vitae, list of publications, and the names of three references to: **Dr. G. Graham Shipley, Biophysics Institute, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118.**

POSTDOCTORAL RESEARCH ASSOCIATES available immediately. Synthesis and bioassay of novel fluorogenic substrates for proteolytic enzymes associated with degenerative diseases. Experience in peptide synthesis and enzyme kinetics highly desirable. Salary up to \$15,000 per year, depending on qualifications; excellent fringe benefits included. Please send résumé and names of three references to: **Dr. Paul J. Bryncs, Department of Pharmacological Sciences, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, N.Y. 11794. The University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH FELLOW or RESEARCH ASSOCIATE (3-year appointment) with training in cell biology and cellular immunology. Experience with hybridomas is desirable but not essential. Project concerns molecular biology of endocrine regulation of active transport. Send curriculum vitae, bibliography, and names of three references to: **Dr. Isidore S. Edelman, Department of Biochemistry, College of Physicians & Surgeons, 630 West 168 Street, New York, N.Y. 10032.**

Columbia University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL TRAINING POSITIONS in biomedical physics and radiobiology are available at the University of New Mexico—Los Alamos Scientific Laboratory. These positions are nominal 2-year appointments at the regular NIH stipend level. Research areas under current investigation include high LET radiobiological effects, high LET dosimetry, and research work in image perception for cancer detection. For information on the Biomedical Physics Program, please contact:

**C. A. Kelsey
Radiology Department
University of New Mexico
Albuquerque, New Mexico 87131**

For information on the Radiobiology Program, please contact:

**M. R. Raju
Mail Stop 880
Los Alamos National Laboratory
Los Alamos, New Mexico 87545**

PSYCHIATRY

Minneapolis—**UNIVERSITY OF MINNESOTA**, Department of Psychiatry, seeks an assistant professor. The position requires a major commitment to research and scholarship in the area of psychopharmacology or psychoendocrinology. The successful applicant will share with other faculty members responsibility for a 24-bed adult ward. In addition to providing a site and patient material for clinical research, the ward also has a training mission for residents, medical students, psychology interns, and other health services students. Applicants should be Board-eligible, with demonstrated interest and ability in psychiatric research. Preference given to persons with fellowship experience. *The University of Minnesota is an Affirmative Action Employer and specifically invites and encourages applications from women and minorities.* Résumé to: **Jerome Kroll, M.D., Box 393 Mayo, University of Minnesota Hospitals, Minneapolis, Minn. 55455.**

RADIOCHEMIST/RADIOECOLOGIST

A position is currently available for a technician in an ongoing program investigating the environmental biogeochemistry of actinide elements. The successful candidate should have a B.S./M.S. degree in one of the areas of interest and experience with various types of counting equipment. A strong analytical background is desired. U.S. citizenship required. Interested parties should send a résumé and the names of two references to:

**James Alberts
Savannah River Ecology Laboratory
Drawer E
Aiken, S.C. 29801**

An Equal Opportunity/Affirmative Action Institution

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION in pharmacology to help develop cardiovascular and neurophysiological techniques to study the effects of antihypertensive and other agents on carotid baro- and chemoreceptor function. Experience in electrophysiological recording and perfusion techniques helpful. Two-year appointment, renewable; starting date: summer or fall 1981. Send curriculum vitae and three letters of reference to: **Dr. W. R. Wooles, Department of Pharmacology, School of Medicine, East Carolina University, Greenville, N.C. 27834.**

Equal Opportunity thru Affirmative Action

RESEARCH ASSOCIATE. M.D. or Ph.D. with relevant experience in tumor and cellular immunology to conduct research in collaboration with senior investigator on the use of cytotoxic cells of tumor bearing hosts for adoptive immunotherapy in combination with cytostatic therapy.

Application deadline for full consideration is 15 May 1981.

**Sheldon Dray, M.D., Ph.D.
Department of Microbiology and Immunology
University of Illinois Medical Center
P.O. Box 6998
Chicago, Ill. 60680**

The University of Illinois is an Equal Opportunity/Affirmative Action Employer and encourages application from women and minorities.

RESEARCH ASSOCIATE POSITION CORNELL UNIVERSITY

Research associate position: Ph.D. in food chemistry. Experience in protein chemistry, water structure, and protein ligand binding. To conduct research on structure-function relationships in food proteins. Résumé and three letters of reference by 25 April 1981 to: **John E. Kinsella, Department of Food Science, 114 Stocking Hall, Cornell University, Ithaca, New York 14853.**

Cornell University is an Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSOCIATE

Research associate position available in the Experimental Applied Physics Laboratory of a university to study the structure dependence of the magnetic and mechanical properties of inhomogeneous metallic systems. Applicants must have a Ph.D. in experimental metal physics, several years of postdoctoral research experience in magnetic, mechanical, and structural properties of metallic glasses, compositionally modulated films, and multifilamentary composites, and a strong and diversified publication record. Extensive experience in the magnetism of metals is essential. Salary: \$20,000. Applications stating full personal and professional details and the names of three references should be sent to: **W. Healey, Cambridge Job Center, 806 Massachusetts Avenue, Cambridge, Mass. 02139, and quote job reference number 1340.**

Position: RESEARCH BIOCHEMIST/MICROBIOLOGIST

Responsibilities: Selected person to assume ongoing research effort on nitrogen fixation by blue-green algae. Present research project involves isolation, selection of mutants, investigation of regulatory mechanism(s) of nitrogenase, and the study of the effects of amino acid analogs and certain nucleotides on nitrogenase induction.

Candidate will be expected to execute a strong independent research program by combining his/her previous professional experience and the leads available in our laboratory.

Qualifications: A Ph.D. in biochemistry, microbiology and/or plant biochemistry, preferably with training in enzymology, microbial physiology, molecular biology, metabolism, and genetics. Evidence of postdoctoral experience in any one of the above areas by published work is desirable.

Salary: Commensurate with qualification and experience.

Deadline for application: 15 May 1981 or until a suitable candidate is found.

Position available: 1 July 1981.

Application procedure: Qualified person should submit a résumé, three letters of recommendation, and transcripts to:

**Melvin E. Walker, Jr., Director
Agricultural Research Station
Fort Valley State College
Box 5744
Fort Valley, Georgia 31030**

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POSITIONS OPEN

RESEARCH ASSOCIATE OR SENIOR RESEARCH ASSOCIATE—A research position is available in an established research program of the Biomedical Engineering Laboratory of Rice University (in cooperation with personnel of the Texas Medical Center). Qualifications include a Ph.D. in engineering (with a biological orientation), biophysics, physiology, or equivalent training and experience. The research involves studies of the response of human blood platelets to various stimuli including shear stress applied in vitro under controlled conditions. The appointment will be for a 1-year term with the possibility of reappointment. The stipend is negotiable depending on experience and training. Send a brief résumé and three references to: **J. D. Hellums, Ph.D., Dean, George R. Brown School of Engineering, Rice University, Houston, Texas 77001. Rice University is an Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE position available in prostaglandin biochemistry for a recent Ph.D. in biochemistry, cell biology, or immunology. Studies will involve the preparation and use of monoclonal antibodies against PGH₂, prostacyclin and thromboxane synthases in studies on the regulation of prostaglandin biosynthesis in normal and diseased tissues. Position to be filled by November 1981. Starting salary is \$13,500. Send curriculum vitae and three letters of reference to: **Dr. William L. Smith, Department of Biochemistry, Michigan State University, East Lansing, Mich. 48824, by 1 June 1981. An Affirmative Action/Equal Opportunity Institution.**

SYSTEMS DESIGNER

Cornell University, The Integrated Pest Management (IPM) Program, is seeking a systems scientist to lead in the design of an expanding IPM program through the application of systems methods, including definition of problems and goals, information and resource management, and evaluation of the implemented system. Candidates must have a Ph.D. in systems science or in a biological or physical science with demonstrated experience in the design or evaluation of agricultural or related management systems. Send curriculum vitae, transcripts, and names and addresses of four references to: **Dr. James P. Tette, IPM Coordinator, Cornell University, New York State Agricultural Experiment Station, Geneva, N.Y. 14456.** Applications will be accepted until 1 June 1981, or later if a suitable applicant has not been selected. *An Equal Opportunity/Affirmative Action Employer.*

VIROLOGIST—A tenure-track position (90 percent research) for an individual with a Ph.D. degree or equivalent and research experience in virus diseases; available 1 October 1981. Primary responsibilities include developing an independent virology research program and directing the virology section of the department. The primary mission of the department is in the area of food animal health and disease research. Participation in ongoing research projects, teaching and advising M.Sc. and Ph.D. students in veterinary science is encouraged. Salary negotiable. Send curriculum vitae and names of three references before 1 June 1981 to: **Dr. David M. Young, Department of Veterinary Science, Veterinary Research Laboratory, Montana State University, Bozeman, Montana 59717. An Equal Opportunity/Affirmative Action Employer.**

VIROLOGY—GENETICS

Applications for an assistant professorship are invited from M.D.'s and Ph.D.'s with strong background in molecular biology and major commitment toward research. To join department oriented toward the molecular biology and genetics of DNA tumor viruses and mammalian cells. Expertise in immunology, enzymology, protein chemistry, or electron microscopy an asset. Canadian experience preferred. Knowledge of French essential. Send applications to: **Dr. Pierre Bourgaux, Département de Microbiologie, Faculté de Médecine, Centre Hospitalier Universitaire, Université de Sherbrooke, Sherbrooke, Québec, Canada J1H 5N4.**

VISUAL BIOCHEMISTRY

A postdoctoral position will be available as of 1 June 1981 to study the enzymology and regulation of vitamin A transformations in the retina and associated structures. A background in enzymology is strongly desired. The salary will be at NIH postdoctoral levels, commensurate with experience. Send curriculum vitae and bibliography as well as names and addresses of three references to: **Professor Robert R. Rando, Department of Pharmacology, Harvard Medical School, Boston, Mass. 02115. Harvard is an Affirmative Action/Equal Opportunity Employer.**

Scientists IMMOBILIZED ENZYMES

Bethesda Research Laboratories (BRL) is again expanding its staff of highly qualified scientific personnel.

A current requirement is in the development of matrix bound enzyme technology leading to the introduction of economically important immobilized enzyme products. We have positions available for both senior and junior level scientists. Ph.D.'s should have significant post doctoral experience in enzyme immobilization. B.S./M.S. candidates should have background in enzymology or organic chemistry with practical experience.

BRL scientists are encouraged to publish independent research in recognized scientific journals and at scientific meetings. Opportunities also exist for interaction with other BRL divisions including Genetics, Cell Biology and Enzymology.

We invite your inquiry. Send C.V. to:

Mr. Wayne E. Fowler
Personnel Director



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MOLECULAR GENETICS Ph.D.'s

THE INTERNATIONAL PLANT RESEARCH INSTITUTE (IPRI) invites applicants for its rapidly expanding programs in advanced molecular genetics. Applicants with significant records of frontier achievements are invited to join a strong team of innovative scientific leaders in the pleasant San Francisco area.

Send résumé with recent publications to:

DIVISION OF MOLECULAR GENETICS, IPRI, 853 Industrial Road, San Carlos, Calif. 94070.

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Dermatological Research

Pfizer Central Research seeks an individual with a Ph.D. in Biological Sciences and at least two years research experience in the area of the structure and properties of human epidermis. We are especially interested in persons who have a demonstrated ability to develop new tools, methods, and models for studying the structure/functions of human stratum corneum, as well as the interaction of this tissue with a wide spectrum of topically-applied molecules.

This position provides excellent opportunity for professional recognition and considerable interaction with scientists in other disciplines. In addition we offer career growth, a competitive compensation and benefit package and the opportunity to live in an attractive Connecticut shore environment. Please send resume in confidence to: **Mr. F. G. Ziegler, Pfizer Central Research, Eastern Point Road, Groton, Connecticut 06340.**



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REQUESTS FOR SUPPORT

U.S.-FRANCE COOPERATIVE PROGRAM ON BASIC CANCER RESEARCH

The U.S. National Cancer Institute (NCI) and the French Institut Nationale de la Sante et de la Recherche Medicale (INSERM) have an agreement to promote cooperation in basic research in carcinogenesis. Limited funds are available through this program to provide travel expenses and subsistence allowance of U.S. scientists to work in France for periods up to a few months on appropriate collaborative research projects with French colleagues. Similarly, limited funds are available to pay for living expenses of French scientists to work in the United States on appropriate collaborative projects with American colleagues. Each request for support will be reviewed for scientific merit by the American and French Program Committees. For further information, please contact:

Dr. Louis R. Sibal
Associate Director for Program
Chairman, U.S. Basic Cancer Research Program
Division of Cancer Cause and Prevention
National Cancer Institute
Building 31, Room 11A03
Bethesda, Maryland 20205

AWARDS

THE SPACE FOUNDATION

1981 AWARDS ANNOUNCEMENT

SPACE INDUSTRIALIZATION FELLOWSHIPS—\$7000 each. To students whose work contributes to the development of space resource use by private industry.

NATIONAL PRIZES—\$5000 each. For outstanding theses or dissertations which contribute to free enterprise in the space environment.

Application deadline: 1 June 1981. Awards dinner: Houston, September 1981. For information: P.O. Box 58501, Houston, Texas 77058.

ASSISTANTSHIPS

TEACHING ASSISTANTSHIPS for September 1981. Graduate study in Biology Department leading to M.S., M.S.H.S., or Ph.D. with concentration in botany, zoology, microbiology, physiology, ecology, cell biology, marine biology. 1980 base stipends: \$3600 to \$3900 (1981 increase anticipated) for 9 months; tuition waiver, which includes 1981 summer courses at our Marine Station at Nahant. For information, write to: **Dr. Ernest Ruber, Department of Biology, NORTHEASTERN UNIVERSITY, Boston, Mass. 02115.** An Affirmative Action/Equal Opportunity Employer.

TRAINEESHIPS

UNIVERSITY OF FLORIDA COLLEGE OF MEDICINE POSTDOCTORAL AND PREDOCTORAL TRAINING IN TUMOR IMMUNOLOGY AND TUMOR CELL BIOLOGY

NIH postdoctoral and predoctoral traineeships are available with graduate research faculty in the following areas: **T-cell, B-cell recognition of tumors; Smith, Peck, and Klein; Tumor-associated antigens and tumor cell membranes:** Smith, Klein, Kimura, Roberts, Wakeland, and Peck; **Cytotoxic T-cell clones and antibody producing hybridomas:** Smith, Roberts, and Klein; **Avian retroviruses and cell differentiation:** Moscovici; **Analysis of antitumor effector mechanisms:** Smith, Normann, Peck, and Kimura. Applications are now being accepted for appointments beginning on 1 July 1981. A letter describing research interests, curriculum vitae, and letters of recommendation should be sent to: **Dr. Paul A. Klein, Program Coordinator, Department of Pathology, College of Medicine, University of Florida, Gainesville, Florida 32610.**

ADVANCED STUDY INSTITUTE

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A comprehensive course presenting in tutorial form but at an advanced level a coherent introduction to the basic physics necessary for understanding modern measurements of fundamental physical constants with applications in science and technology. Erice, Sicily; 16 to 28 November 1981.

Information and application:

Professor P. H. Cutler
104 Davey Laboratory
University Park, Pa. 16802
Telephone: 814-865-2832

SYMPOSIUM

IMMUNOPARASITOLOGY SYMPOSIUM

An Immunoparasitology Symposium will be held on 17 to 19 June 1981 in Lincoln, Nebraska. Topics addressed will include harvesting, characterization, and cloning of antigens and antibodies, host immunomodulation, functional assays of the immune system, immunodiagnosis, and immunoprotection. Registration (\$35) limited to 300 persons. Sponsored by Oregon State University School of Veterinary Medicine, University of Nebraska Department of Veterinary Science, and Norden Laboratories. Contact: **Dr. Gary L. Zimmerman, Symposium Chairman, School of Veterinary Medicine, Oregon State University, Corvallis, Ore. 97331.** Telephone: 503-754-2927.

DOCTORAL PROGRAM

PRE- AND POSTDOCTORAL STUDY

Predocorator traineeship and one or two research assistantships are available to applicants for Ph.D. program in **BIOPSYCHOLOGY.** Emphasis on animal models of research training in: behavioral cardiology, psychopharmacology, neurophysiology, learning. Postdoctoral training in experimental behavioral cardiology. Send application, transcript, three letters of recommendation, and GRE scores to: **Doctoral Studies Committee, Department of Medical Psychology, University of Oregon Health Sciences Center, Portland, Oregon 97201; telephone: 503-225-8464.**

FELLOWSHIPS

PRE- AND POSTDOCTORAL FELLOWSHIPS in neurophysiology; studies in brain metabolism utilizing microelectrodes.

Dr. James Halsey
Department of Neurology
University of Alabama Medical Center
Birmingham, Ala. 35294
Telephone: 205-934-2400
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POSTDOCTORAL FELLOWSHIP available for study of ion fluxes across cardiac subcellular membranes. A background in enzyme kinetics and/or basic immunological techniques is desirable. Recent Ph.D. in biochemistry preferred. Send résumé and names of three references to: **Dr. M. Kirchberger, Department of Physiology and Biophysics, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029.** An Equal Opportunity Employer.

The University of California, Irvine, College of Medicine, offers a **POSTDOCTORAL FELLOWSHIP IN NEUROPHYSIOLOGY** to work on neuronal mechanisms of alcohol in the CNS. The research primarily involves using single unit recording techniques and a background in electrophysiology is required. Interested persons please send curriculum vitae and request three letters of reference to be sent to: **Nai-Shin Chu, M.D., Ph.D., Department of Neurology, College of Medicine, University of California, Irvine, Calif. 92717.** Salary range: \$1243 to \$1561 per month. Position available summer 1981. Affirmative Action Employer.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS FOR RESEARCH IN NEUROPLASTICITY AND REGENERATION

Positions are available after July 1981 for interdisciplinary studies in neuroplasticity and regeneration with a group comprised of investigators from the Departments of Neurosurgery, Neurology, and Otolaryngology. Current research interests of the participating faculty include sprouting and synapse formation in response to lesions, development of synaptic connections and the effects of activity on synaptic development, CNS injury by viruses, sprouting and reorganization of neuromuscular connections, structural and functional alterations of synapses in response to activity, and neuronal mechanisms of recovery of function following brain damage. Applicants should hold either the Ph.D. or the M.D. degree, and should be committed to a research career. We are particularly interested in clinically trained individuals with a commitment to basic research. Inquiries should be directed to:

**Oswald Stewart, Ph.D., and
John A. Jane, M.D., Ph.D.**
Neuroplasticity and Regeneration Training Program
Department of Neurosurgery
University of Virginia School of Medicine
Charlottesville, Virginia 22908

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

POSTDOCTORAL FELLOWSHIP or RESEARCH ASSOCIATESHIP, depending on prior experience. The projects concern purification and immunology of steroid hormone receptors and Na/K-ATPase. Experience with tissue culture, protein purification and/or myeloma hybridization is desirable. Responsibilities and salary will be commensurate with status of the appointee.

Send curriculum vitae, bibliography, and names of three references to: **Dr. Isidore S. Edelman, Department of Biochemistry, College of Physicians and Surgeons, 630 West 168 Street, New York, N.Y. 10032.**

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POSTDOCTORAL FELLOWSHIP TWO POSITIONS

Job requirement: To conduct research in any one of the following research projects in the laboratory: (i) synthesis and conformational studies on peptides and polypeptide models of proteins, and (ii) structural aspects of protein biosynthesis.

Qualifications: Ph.D. in biochemistry, bioorganic or physical chemistry. Previous research experience along with proven record of publications would be an asset. Experience in areas like peptide synthesis, protein isolation and purification and physical chemical characterization of copolymers will be desirable.

Salary: Postdoctoral fellowship, \$16,000 to \$18,000 per annum.

Applications containing curriculum vitae and references may be sent to:

Dr. V. S. Ananthanarayanan
Department of Biochemistry
Memorial University of Newfoundland
St. John's, Newfoundland, Canada A1B 3X9

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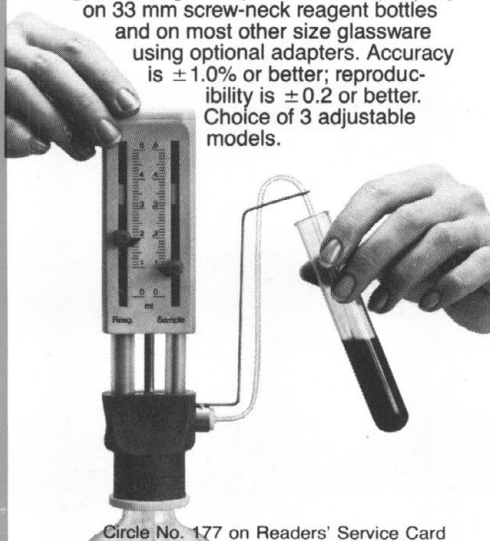
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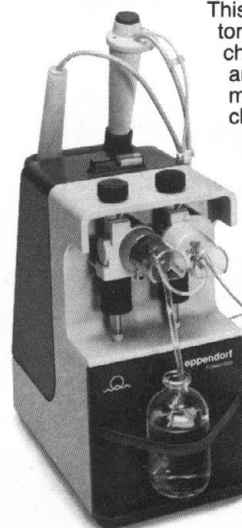
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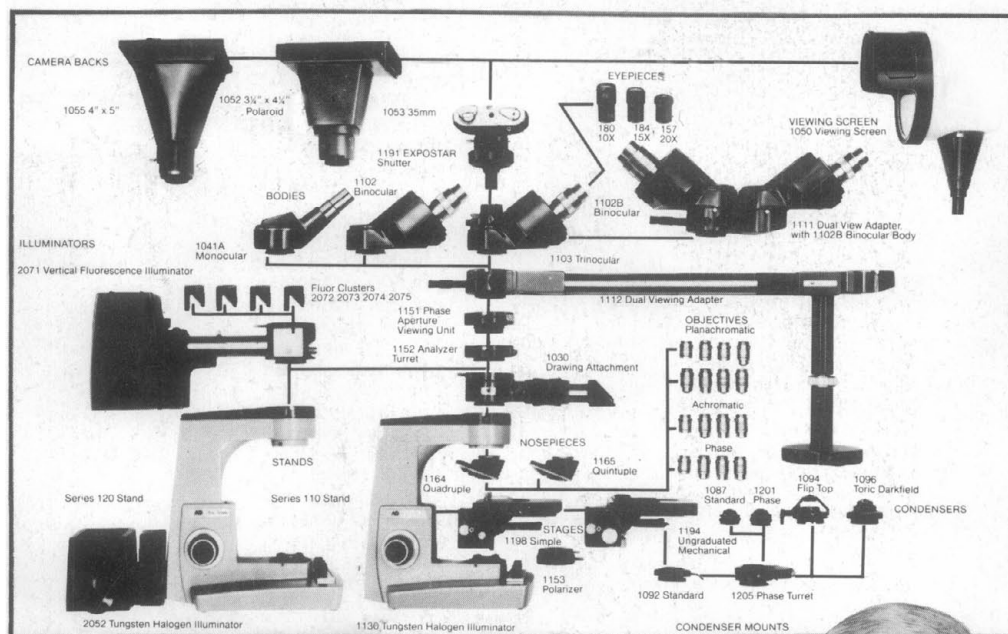


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