

book have successfully met the challenge by pooling their research and teaching experience with the acknowledged advice from many colleagues and other experts to produce a modern and extensive treatment. The authors' aim of creating a textbook that can be used by students taking their first course in cell biology, whether at the undergraduate, graduate, or medical school level, largely is fulfilled by the book; throughout, there are many examples and discussions drawn from molecular and cellular research on viruses, prokaryotes, lower eukaryotes, and plants, as well as from human biology and pathology.

The book contains 19 chapters grouped into three sections. The first section, *Introduction to the Cell*, covers fundamental aspects of evolution, biochemistry, and genetics; it includes a chapter dealing with experimental methods and research instrumentation. This portion of the book is intended mostly to serve as background or for review purposes. The second section, *The Molecular Organization of Cells*, includes the subjects found in most other textbooks on cell biology, although with emphasis on genetics and molecular mechanisms. The attention of the student is often explicitly directed to subjects about which significant knowledge is yet to be acquired. In the third section, *From Cells to Multicellular Organisms*, more extensive attention is given to the complex dynamics of cell interactions in fertilization and early development, during differentiation and tissue renewal, in the nervous system, and in the immune system; a final chapter points out many special and fascinating features of the cells and tissues in plants. The way the book is organized permits a thorough consideration both of the molecular basis of cell structure and function and of the cellular basis of tissue biology.

Although there are six authors, the text is stylistically unified for the most part and easy to follow. Key words are emphasized with boldface or italics; many terms and specific topics are cross-referenced. Each of the carefully organized chapters begins with a brief introduction of the main topics to be considered, and a separate summary is provided for each topic. The topics in turn are divided into subtopics; the treatment of each of the latter is headed by a statement of fact or a conclusion. The headings usually include citations of relevant review articles, research reports, or books; the works cited, which extend into 1982, are listed at the end of each chapter. Different large assemblages of

related facts or current concepts (such as the stages of mitosis and the properties of different types of collagen) are summarized efficiently in tables, charts, and diagrams. The myriad figures are of outstanding quality and will be a great aid to students. The index is quite complete, largely justifying the absence of a glossary.

There are rather few factual errors in the book. Although no reasonable person would want to suggest adding more pages to a book that is already very long, it must be pointed out that a few topics having general interest and current importance are not dealt with—for example, GERL (Golgi-associated endoplasmic reticulum from which lysosomes form), the number of mitochondria per cell, and differences between ciliary and cytoplasmic microtubules. One of the few features of the book that strikes me as unfortunate is the use of only one label for a given structure without listing of alternatives or historical synonyms (although the subjects are indeed fully described and discussed, there is no mention of such widely used terms as "plasmalemma," "micropinocytosis," "microbodies," "nuclear annuli," or "zonula occludens"); one can hope that teachers will point out these other terms in their classes, particularly for the benefit of graduate students. Teachers also might want to bring forth the names and circumstances of scientists who are responsible for particularly important research discoveries, since experiments and concepts are totally depersonalized in the book.

Most students and teachers will initially be overwhelmed by the weight of the volume, which has a large page size and nearly double the number of pages in many other cell biology textbooks. One can hope that the lengthening arms of students lugging this hefty book around campus will be regretted less by virtue of its reasonable price and the realization that it could be used as a supplemental textbook for other courses (such as developmental biology, histology, and biochemistry).

This book is totally modern in approach. Thus, the coverage of membrane structure starts with fluidity rather than leads up to it in a historical sequence; similarly, muscle is covered within a consideration of the cytoskeleton rather than separately. The authors have had the fortitude to change some of the traditional approaches used by many other textbooks in cell biology. For example, it is refreshing to see that meiosis is covered in its natural context of gametogen-

esis, instead of automatically being made the subject of the second half of a chapter on mitosis and cell division.

Molecular Biology of the Cell is a particularly modern and masterly treatment of one of the most exciting fields in biological science. I heartily recommend it for classroom use.

WILLIAM H. MASSEVER

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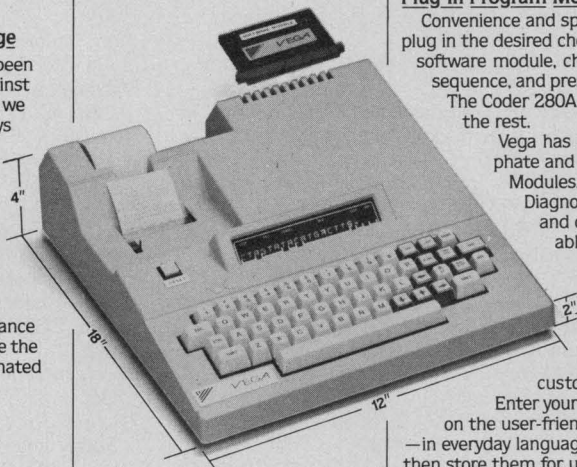
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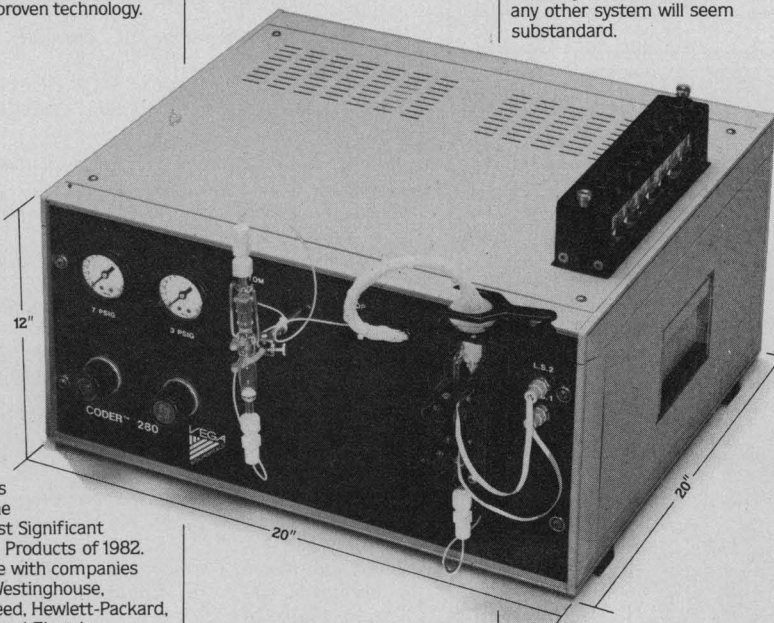
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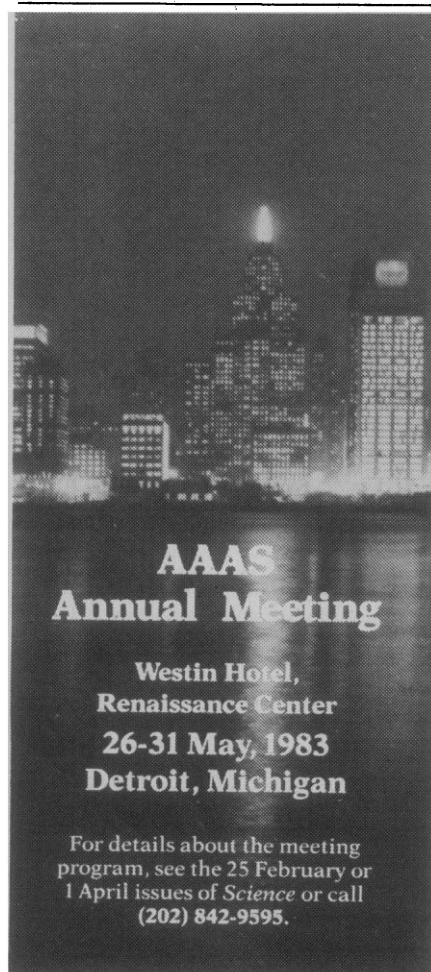
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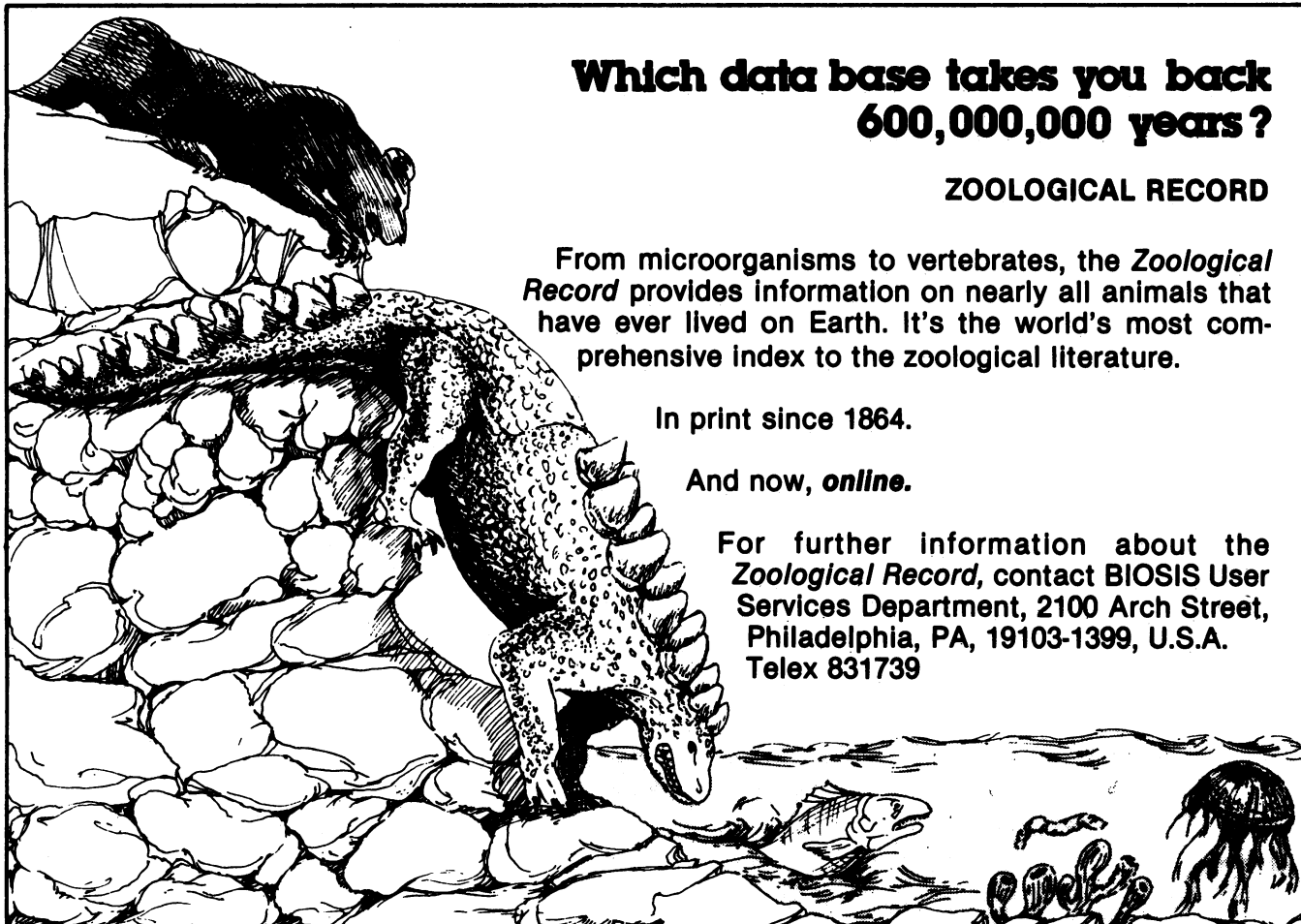
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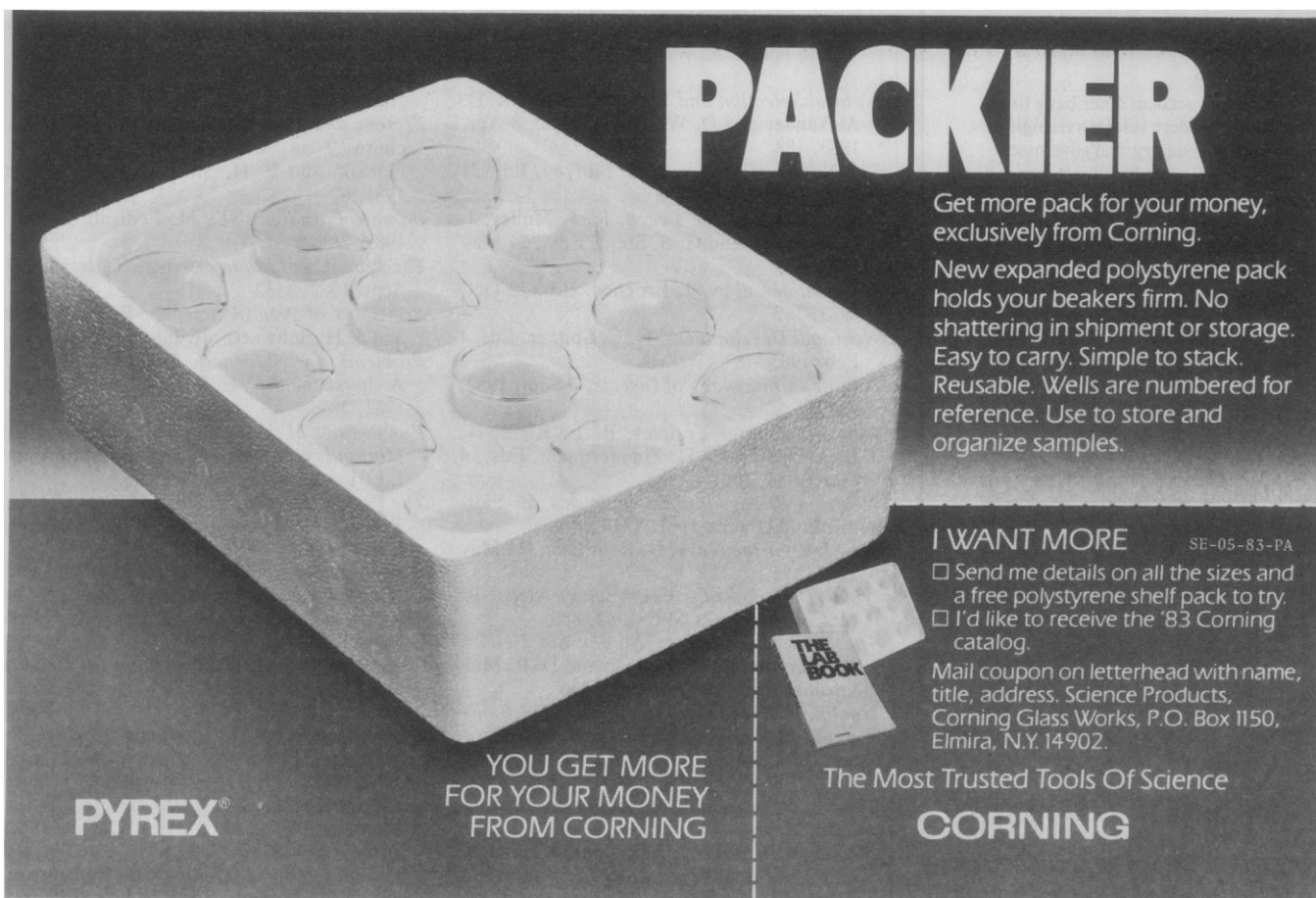
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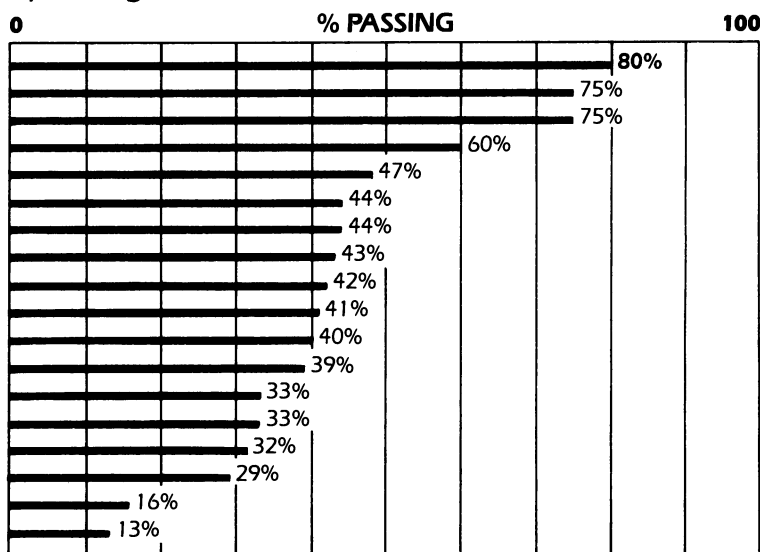
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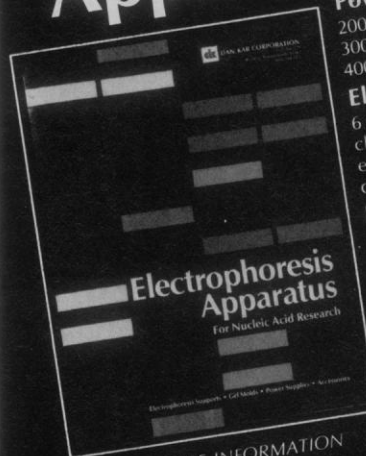
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RECOMBINANT DNA APPLICATIONS TO HUMAN DISEASE

Edited by C. Thomas Caskey and Raymond L. White

Banbury Report 14

Recombinant DNA methodologies are providing new opportunities for analyzing the human genome in health and disease. In October, 1982, clinicians and researchers representing major aspects of this approach assembled at the Banbury Center of Cold Spring Harbor Laboratory for a detailed consideration of the present state and likely future development of this field. Endocrinological, metabolic and blood disorders, molecular genetic approaches to heritable components in cancer, and probes for classical heritable disorders, such as muscular dystrophy and Huntington's chorea, were among the major thrusts for these sessions. This volume presents a resource of current information on this exciting departure as one of molecular biology's most powerful new tools is brought to bear upon one of medicine's most enduring and intractable challenges.

Authors and Discussants: A.L. Beaudet, G.I. Bell, W.F. Benedict, D. Botstein, S. Brenner, C.T. Caskey, K.E. Davies, H. Erlich, B.G. Forget, U. Francke, T. Friedmann, J.F. Gusella, M.E. Harper, D. Housman, H.H. Kazazian, Jr., S.A. Latt, H.I. Miller, R. Nussbaum, S.H. Orkin, D. Page, D. Patterson, P. Pearson, D. Pious, T.B. Shows, M. Siniscalco, M.H. Skolnick, L.C. Strong, T.A. Waldmann, S.M. Weissman, R.L. White, M. Wigler, R. Williamson, S.L.C. Woo

Session I: Globin Genes, HLA, and Immunoglobins: Normal and β -Thalassemic Globin Genes; DNA Polymorphism in the β -Globin Gene Cluster; Genes of the Human Major Histocompatibility Complex; Immunoglobulin Gene Rearrangements in Human Lymphocytic Leukemia; Analyses of the HLA Region

Session II: Specific Disease Entities: Molecular Analysis of the HPRT Locus; Characterization of an Expressible Human HPRT cDNA; The Human Argininosuccinate Synthetase Locus; α -Antitrypsin Deficiency and Pulmonary Emphysema

Session III: Oncogenes and Heritable Cancers: Activation of the Human H-ras Gene; Basis for Cloning of the Retinoblastoma Gene; Genetic Heterogeneity in Retinoblastoma

Session IV: Chromosome Alteration and Mapping: Chromosome Mapping of Single-Copy Sequences; Mapping of Cloned Genes and DNA Polymorphisms to Study Human Disease; Mapping DNA Sequences to Chromo-

some Regions Cell Hybrids; Recombinant Phage Libraries Enriched For the Human X Chromosome; Gene Mapping by Metaphase Chromosome Transfer; Chinese Hamster/Human Hybrid Cells Containing Chromosome 21 Fragments

Session V: Specific Linkage Associations: Approaches to Linkage Analysis in the Human; Genetic Markers and Linkage Analysis; Use of Restriction Polymorphisms to Map the Huntington's Disease Gene; X-Y Sequence Homologies; Study of Cystic Fibrosis Using Gene Probes; A Human X Chromosome Library for the Study of X-Linked Diseases; Molecular Mapping of the Human Genome; A Crossroad Between Basic and Applied Research

Session VI: Growth Hormone and Therapies: Growth Hormone Gene and Human Disease; Polymorphic Locus Flanking the Human Insulin Gene; Restriction Length Polymorphism Analysis of HLA; Food and Drug Administration Regulation of the Products of Recombinant DNA Technology

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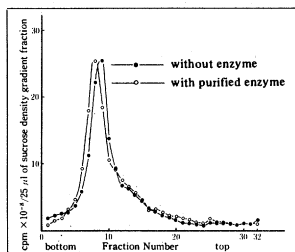


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CHAIR IN SOLID EARTH PHYSICS (MARINE GEOPHYSICS)

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The chair will be appointed on the understanding that any changes in scientific duties, pension, or retiring age made by law or by the King with the agreement of Parliament, are to be accepted without compensation.

Applicants should submit five copies of scientific work—published or unpublished—which they wish to be considered for the appointment as well as six copies of a list of all scientific contributions with information on where they were published. Scientific contributions are to be submitted, in numbered order and in five groups, to the science faculty of the University of Bergen within 1 month of the closing date for applications. Scientific manuscripts in preparation may be submitted within 3 months of the closing date for applications provided notice of intent is given on submitting the other publications. Applicants are otherwise referred to the current rules for the procedure to be followed in the appointment of professorships and readerships.

A résumé of the vacant chair can be obtained on request from:
Det matematisk-naturvitenskapelige fakultet, postboks 25, 5014 Universitetet i Bergen, Norway.

By decision of the collegium, applications from women are especially encouraged.

Applications, which must include complete curriculum vitae, should be addressed to the King and be sent together with relevant certificates and one copy of a list of publications to: **Det matematisk-naturvitenskapelige fakultet, postboks 25, 5014 Universitetet i Bergen, Norway, before 12 August 1983.**

INTERGOVERNMENTAL PERSONNEL ACT APPOINTMENT

Office of Naval Research Project Officer

ONR is considering candidates from universities for Intergovernmental Personnel Act (IPA) appointments within the Divisions of the Engineering Sciences Directorate. The research program of ONR includes basic research and exploratory development contracts at university, research institute, industrial, and government laboratories.

The Materials Division focuses on studies related to metals, ceramics, tribology, corrosion, composites, and processing science. The Mechanics Division pursues research in hydrodynamics, aerodynamics, solid mechanics, marine and air vehicle propulsion, and energetic materials. The Information Sciences Division supports research in artificial intelligence, expert systems, advanced automation and production engineering, software engineering, computer graphics and machine architectures.

IPA project officers would identify, initiate and evaluate research projects within the field of their expertise related to the above topics; responsibilities and activities related to the contract program and special projects are expected to provide experience which would improve the appointees' future capabilities as members of the staffs of their home institutions. Such assignments are typically for 1 to 2 years and could begin as soon as June or September 1983.

Applicants should have earned a Ph.D. or its equivalent in a relevant field at least three years ago and should currently be actively engaged in research. An individual undertaking such an assignment would remain an employee of the home institution which would be reimbursed by ONR for his or her salary and other direct expenses.

HOW TO APPLY: The curriculum vitae of a candidate should be forwarded to:

Dr. A.M. Diness—Associate Director of Research (Engineering Sciences)

Code 430 Attn: IPA-S

OFFICE OF NAVAL RESEARCH

800 North Quincy Street • Arlington, VA 22217

An Equal Opportunity Employer • U.S. Citizenship Required

DRUG METABOLISM

Expansion of our dermatological research group has resulted in openings in Metabolism and Pharmacokinetics at our Buffalo, New York facility.

SR. RESEARCH SCIENTIST

Responsibilities in this position include the planning, leading, organizing and controlling of pre-clinical and clinical experimental studies on the absorption, distribution, metabolism, excretion, bioavailability and pharmacokinetics of drugs. The position requires a Ph.D in Pharmaceutics, Biochemistry, Biochemical Pharmacology or Pharmacy with research experience in drug metabolism. Some industrial experience in this field would be helpful.

RESEARCH SCIENTIST

Responsibilities in this position involve experimentations on new drugs and new drug formulations. This would include the organization and control of the use of analytical methods, radioactive tracers, and the drug administration to and sample collection from animals. The position requires a B.S. in chemical or biological sciences with training or experience in drug metabolism and animal handling.

We offer fully competitive salaries, comprehensive benefits and a professional environment where high visibility encourages career growth. For confidential consideration, please submit resume with salary requirements to:

Manager, Human Resources

Bristol-Myers Company

Pharmaceutical R&D Division

100 Forest Avenue, Buffalo, N.Y. 14213

An Equal Opportunity Employer M/F/H/V

RESEARCH SCIENTISTS

The Biotechnology Division of Standard Oil Company (Indiana) is expanding its staff and is seeking Scientists at the PhD level in the following fields of specialization;

- BIO-ORGANIC CHEMISTRY
- NUCLEIC ACID CHEMISTRY
- IMMUNOCHEMISTRY

Qualified candidates should have a good background in organic chemistry with experience in immobilization chemistry and/or solid phase synthesis techniques, and/or antibody labeling techniques. The above positions involve fundamental research toward industrial applications of biotechnology.

Your benefits will come in the form of outstanding professional exposure and long range growth potential. We are located in Naperville, Illinois, just 30 miles outside Chicago, and offer a choice of urban, suburban or rural living. Salary is commensurate with experience, and we offer a comprehensive benefits package. If you qualify for this position, please send resume with a detailed qualifying letter, in confidence to:

Professional Recruiting Coordinator

AMOCO RESEARCH CENTER

P.O. Box 400
Naperville, IL 60566

An Equal Opportunity Employer M/F/H



POSITIONS OPEN

The California Academy of Sciences, Northern California's largest natural history museum, invites applications at all levels for the **IRVINE CHAIR IN ANTHROPOLOGY**. As curator and chairman of the Department of Anthropology the successful candidate will participate in the development and implementation of all public programs relating to anthropology and will oversee the expansion of ethnological collections in one or more of the following areas: western North America, the Pacific-Far East, and Central and South America. Excellent research and publication record (specialization open) expected: Ph.D. required. Send letter of inquiry and curriculum vitae by 31 July 1983 to: Nancy B. Dykes, Director of Administration, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118.

Cornell University invites applications from qualified candidates for the position of **CHAIRMAN** of the Department of Pharmacology at the Cornell University Medical College in New York City. The chairman of pharmacology will head an active department of approximately 50 individuals, including 11 faculty members, 7 of whom are full professors. Candidates must have Ph.D. or M.D. degree with extensive experience in medical college teaching and biomedical research and demonstrated leadership qualities. Applicants should submit current curriculum vitae which includes list of publications to: R. Gordon Douglas, Jr., M.D., Chairman Search Committee, Cornell University Medical College, 1300 York Avenue, Room F437, New York, N.Y. 10021. An Equal Opportunity Employer, M/F/H.

CHAIRPERSON DEPARTMENT OF MEDICINE UNIVERSITY OF VERMONT

The University of Vermont College of Medicine is soliciting applications for the position of **chairperson** of the Department of Medicine. The chairperson is also chief of the Medical Service at the Medical Center Hospital of Vermont. The Department of Medicine has 130 full-time and part-time faculty and 57 residents and fellows in all of the subspecialties. The College of Medicine also maintains a Clinical Research Center, a Regional Cancer Center, and the Vermont Lung Center which have significant liaison with the department. Major affiliations also exist with the Champlain Valley Physicians Medical Center in Plattsburgh, N.Y., and the Maine Medical Center in Portland. The Department of Medicine has had a long history of excellence in teaching, research, and patient care. A number of members of the department are nationally recognized leaders in their field. Applicants must be Board-certified in internal medicine with significant prior academic and administrative experience. Applications will be received until 1 August 1983. *The University of Vermont is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.* Applications and inquiries should be addressed to: Sheldon Weiner, M.D., Chairman, Department of Medicine Search Committee, A-217 Medical Alumni Building, The University of Vermont, Burlington, Vermont 05405.

CHAIRPERSON DEPARTMENT OF BIOCHEMISTRY THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT DALLAS SOUTHWESTERN MEDICAL SCHOOL

Applications and nominations are invited for the position of **professor and chairperson** of the Department of Biochemistry. Candidates should have an outstanding record of research accomplishments and be dedicated to the provision of leadership in research and teaching for a department that currently includes more than 25 faculty. Nominations and applications will be received until the position is filled and should be addressed to: Alfred G. Gilman, Chairman of the Biochemistry Search Committee, Department of Pharmacology, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. An Equal Opportunity Employer.

EXECUTIVE DIRECTOR, CENTER FOR ENERGY STUDIES (anticipated). Must possess skills and experience in organization, administration, contract negotiations, development of funding sources, and interpersonal relations, as well as in interdisciplinary professional activities related to energy. Send letter of application, résumé, and three letters of recommendation to: Sean P. McGlynn, Vice Chancellor for Research, Louisiana State University, Baton Rouge, La. 70803-0301. Deadline for application: 15 June 1983. An Equal Opportunity Employer.

LOOKING FOR A SCIENTIST OR ENGINEER WITH GOVERNMENT AND PUBLIC POLICY?

If your university, company, non-profit organization, or government agency is looking for a scientist or engineer with governmental and public policy issue experience, then perhaps you should consider a former Congressional Science and Engineering Fellow.

They are men and women who have outstanding credentials in physical or biological or behavioral science or engineering, and have at least 1 year of intense and unique experience working on legislative issues in Congress.

If you are seeking candidates with these qualifications or have questions regarding a possible match between your needs and the qualifications of fellows and guidelines of our program, please contact: **Dr. Richard Scribner or Dr. William Wells, American Association for the Advancement of Science, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036; telephone: 202-467-4310.**

VISITING RESEARCH SCIENTIST CHEMICAL ABSTRACTS SERVICE

Applications are invited for the position of Visiting Research Scientist at Chemical Abstracts Service, a Division of the American Chemical Society, for a period of 9 to 12 months starting during 1984. Academic research experience in Chemistry, Chemical Engineering, or Computer/Information Science is required. Tenure or tenure-track faculty members anticipating sabbatical leaves are encouraged to apply.

Chemical Abstracts Service conducts an aggressive R&D program to plan and develop a highly automated information processing and service delivery system. Chemical and chemical engineering information services are provided throughout the world. In this environment the visiting scientist will have the opportunity to continue his/her information research activity and to contribute to advances in the state of the art. Areas of general interest include computer system topics (such as networking), advanced information system topics (such as knowledge-based systems), and chemically-related topics (such as structure-activity correlation).

Chemical Abstracts Service is currently interested in investigating the following specific topics as they relate to our operations and service interests; measurement of productivity of research and development staff, identification of tools and technology for improving the productivity of research and development staff, and application of knowledge-based (or "expert") systems in aiding users to interact with information search and retrieval systems.

Interested candidates should submit a summary of their proposed work, along with their vita, list of publications, and estimated period of availability by July 15, 1983 to:

Dr. Ronald L. Wigington
Director, Research and Development
Chemical Abstracts Service
P.O. Box 3012
Columbus, Ohio 43210

After review of the summaries, selected candidates will be invited to submit a detailed proposal of work. The final selection will be made on the detailed proposals.

The Energy and Environment Division of the Lawrence Berkeley Laboratory's Passive Solar Project is offering these opportunities:

Staff Scientist I—Develop and implement heat transfer and optical algorithms to be incorporated into state-of-the-art building energy analysis computer programs used in the study of passively heated, cooled and lighted buildings. Develop, test and apply numerical techniques for studying convection heat and mass transfer in buildings. Assist in the identification of experiments to verify models and utilize the models in commercial building energy performance studies from which optical design parameters will be deduced. Responsible for reports on these duties. Must be familiar with conventional calculation techniques for conductive, radiative and convective heat transfer. Requires an understanding of numerical analysis methods for examining convective heat and mass transfer. Must be thoroughly familiar with FORTRAN programming, especially as it relates to numerical analysis. Past exposure to building energy analysis, optics and solar technologies desirable. Prefer an advanced degree in applicable engineering or scientific discipline. PLEASE SPECIFY JOB #A/0910.

Staff Scientist II—Responsible for the specification, development, validation and application of software for examining convection in buildings. Validate and apply software for energy analysis of passive solar buildings. Conduct research on heat transfer and fluid flow under natural and forced conditions and direct development of engineering characterizations of convection processes. Examine the applicability of passive heating, cooling and lighting strategies to the non-residential building sector. Publication of results is expected. Must have a thorough background in fluid mechanics, heat transfer and numerical analysis. Experience with state-of-the-art techniques for analyzing conductive, radiative and convective heat transfer as applied to building energy analysis is required. Prefer an advanced degree in engineering or science. PLEASE SPECIFY JOB #A/0909.

Please send two copies of resume to: **Employment Office, Building 65, Lawrence Berkeley Laboratory, One Cyclotron Road, Berkeley, CA. 94720.** An equal opportunity employer, m/f/h.

BIOGEN

Positions are available in our Cambridge laboratory for a scientist with experience and skills in Recombinant DNA Technology in the specialty area of:

Expression of eucaryotic DNA sequences in *E. coli*, *B. subtilis*, yeast and other fungi and in mammalian cells.

Biogen is a biotechnology company with laboratories in the United States and Switzerland, developing commercial applications of molecular biology in the areas of agriculture, chemicals, pharmaceuticals and energy. We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment.

Biogen offers a competitive salary and benefits package.

Reply to: **Human Resources Department, Biogen Inc., 14 Cambridge Center, Cambridge, MA 02142.**

Please send your resume and a list of three individuals whom we may contact for references on your behalf. All replies will be evaluated in confidence. Biogen is an equal opportunity employer.

*Biogen is a service mark of Biogen N.V. for the provision of research and consultation services relating to all aspects of biotechnology including genetic engineering, fermentation, microbiological conversion, and the purification and processing of the products of biotechnology.

POSITIONS OPEN

The University of Calgary DEVELOPMENTAL EMBRYOLOGIST

Position available at assistant or associate professor level for a reproduction biologist with an active research programme in mammalian development or reproduction which emphasizes morphological approaches. Up-to-date electron microscopy, quantitative microscopy, and computer processing equipment available in central facility. Funding available on competitive application to Alberta Heritage Foundation for Medical Research for salary, establishment, and initial operating expenses. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.* Applications must be received by 1 August 1983. Send curriculum vitae, summary of research interests, and names of three referees to:

Dr. A. D. Dickson
Department of Anatomy
The University of Calgary
Faculty of Medicine
2500 University Drive, NW
Calgary, Alberta, Canada T2N 1N4

Full-time academic appointment in *Department of Psychiatry*, University of Michigan Medical Center, as **DIRECTOR, INPATIENT PROGRAM**, Clinical Studies Unit (CSU). The CSU is a research unit with 12 inpatient beds and accompanying outpatient clinic, specializing in research evaluation and treatment of patients with affective disorders. Emphasis upon developing biological markers of depression and mania (neuroendocrine tests, sleep electroencephalography, peptide assays, psychomotor parameters, and brain imaging with regional cerebral blood flow and positron emission tomography). Excellent research support and resources already established. Tenure-track appointments at academic rank appropriate to qualifications and experience. Send curriculum vitae and names and addresses of three referees to: **John F. Greden, M.D., Professor of Psychiatry (N5737), University of Michigan Medical Center, Ann Arbor, Michigan 48109; telephone: 313-763-4382.** A nondiscriminatory, Affirmative Action Employer. Code 154F.

EDITOR IN CHIEF, JOURNAL OF CELL BIOLOGY. The Editorial Board of the *Journal of Cell Biology* (JCB) and the Publications Committee of the American Society for Cell Biology announce the position of editor in chief of the JCB. We seek an active scientist with substantial credentials in cell biology, innovative and yet mindful of the traditions of the Journal, who will be both willing to work collegially with associate editors and to devote substantial effort to the Journal, for which financial compensation will be available. The duration of initial appointment and terms for reappointment are negotiable. Send curriculum vitae to: **Dr. Thoru Pederson, Chairman, JCB Editor Search Committee, Cell Biology Group, Worcester Foundation for Experimental Biology, Shrewsbury, Mass. 01545.** Application deadline: 1 July 1983.

FACULTY POSITION—Opportunity for individual with strong research and teaching background. Full-time, tenure-track faculty position at assistant professor or associate professor level available July 1983. Responsibilities include independent and joint research and undergraduate and graduate teaching in dental materials. Ph.D., D.D.S.-Ph.D., or D.D.S.-M.S. in science and demonstrated research ability required. Previous academic experience desirable. Academic rank and salary commensurate with qualifications and experience. *Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae, brief statement of personal research objectives, and names and addresses of three referees to: **Dr. Toru Okabe, Director, Dental Materials Science Program, Baylor College of Dentistry, 3302 Gaston Avenue, Dallas, Texas 75246.**

WAYNE STATE UNIVERSITY School of Medicine, Department of Internal Medicine, has **FACULTY POSITIONS** available in the Division of Rheumatology. Rank open. Physician must be Board-certified in rheumatology; must have a strong research interest in immunology or connective tissue macromolecules and a good record of research accomplishments. Send inquiries along with curriculum vitae to:

Vainutis K. Vaitkevicius, M.D.
Professor and Chairman
Department of Internal Medicine
3990 John R
Detroit, Michigan 48201

POSITIONS OPEN

ENDOCRINE/REPRODUCTIVE BIOLOGY FACULTY POSITION

The Worcester Foundation has initiated a major recruitment drive to attract talented investigators of all faculty-level ranks in the field of **ENDOCRINE/REPRODUCTIVE BIOLOGY**. The Foundation is especially interested in those using **molecular, cellular, genetic, and biophysical approaches** in the following areas of interest:

- 1) Hormone receptors,
- 2) Postreceptor events concerned with the mechanism of hormone action, and
- 3) Neuroendocrinology.

Researchers pursuing vigorous independent programs in these and related areas are encouraged to apply. Candidates appointed in endocrine biology will have every opportunity to interact with other programs in cell biology, neurobiology, and reproduction.

Applicants should send, in duplicate, their curriculum vitae, a summary of research interests, and at least three references to: **Chairman, Endocrine Search Committee, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Mass. 01545.**

An Equal Opportunity/Affirmative Action Employer

The Fred Hutchinson Cancer Research Center (FHCRC), Clinical Science Division, invites applications for the position of an **EXPERIMENTAL PATHOLOGIST** at the assistant through full member (professor) level. The applicant should be qualified in anatomic or clinical pathology with an interest in marrow transplantation. Preference will be given to investigators who have already demonstrated outstanding potential for an independent research career in the fields of molecular and cellular immunology, cytogenetics, immunogenetics, transplantation biology, or developmental biology. The successful candidate will be expected to set up a productive research team with an independent program. Participation in the clinical services on marrow transplant patients with a time commitment not exceeding 25 percent will be required. Applications should be sent to: **The Chairman of the Experimental Pathology Search Committee, Room 318, Fred Hutchinson Cancer Research Center, 1124 Columbia Street, Seattle, Washington 98104.** FHCRC is an Equal Opportunity Employer.

IMMUNOBIOLOGIST

The Department of Microbiology and Immunology of the University of Miami School of Medicine invites applications for a tenure-track opening of associate professor. Preference will be given to individuals with cancer-related experience involving monoclonal antibody production. Send curriculum vitae, an outline of research interests, and names of three references to: **Chairman, Immunobiology Search Committee, Department of Microbiology and Immunobiology (R-138), University of Miami School of Medicine, Miami, Florida 33101.** *An Equal Opportunity/Affirmative Action Employer.*

UNIVERSITY OF BIRMINGHAM (UK)

Department of Medicine

Applications are invited from appropriately qualified scientists for a tenured **LECTURESHIP** (nonclinical) devoted to research on the molecular aspects of endocrinology, particularly in the field of control of pituitary trophic hormones. Applications by 3 June 1983 to: **Assistant Registrar, Medical School, Birmingham B15 1TJ, England,** from whom further particulars may be obtained. **Telephone: 011 44 21 472 3318.** *An Equal Opportunity Employer, M/F.*

PLANT PHYSIOLOGIST

Tenure-track position for assistant professor beginning August 1983 or January 1984. The candidate will be expected to teach plant physiology and a course in area of specialty, to maintain an active research program, and to participate in one or more areas of the department's doctoral program. Applicant should send curriculum vitae and three letters of reference to: **Dr. William J. Brett, Chairman, Department of Life Sciences, Indiana State University, Terre Haute, Indiana 47809,** by 20 June 1983. *Indiana State University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

LIFE SCIENCES TECHNOLOGY TRANSFER. Individual with life science educational background and academic/industrial experience in pharmaceutical, medical, and diagnostic product development is sought for a nonprofit organization's Tucson office. Duties include evaluation of novel concepts/inventions for technical feasibility, marketability, patenting, and licensing. Requires interfacing with academic scientists, patent attorneys, and industrial personnel engaged in new product development. Reasonable travel required to universities and industrial firms. Please forward résumé and other pertinent information to: **George M. Stadler, Executive Vice President, Research Corporation, 6840 East Broadway Boulevard, Tucson, Arizona 85710.** *An Equal Opportunity Employer.*

MICROBIOLOGY—Assistant or associate professor. Strong commitment for teaching proficiency in **IMMUNOLOGY**. Minimum requirement: Ph.D. degree. Research encouraged in the general area of **IMMUNOLOGY**. Good verbal communication in the English language is essential. Spanish is not a requirement for this job. Starting date: September 1983 or later. Send résumé and three letters of reference to: **Chairman, Microbiology Department, Ponce School of Medicine, P.O. Box 7004, Ponce, Puerto Rico 00732.** *Equal Opportunity Employer.*

NEUROBIOLOGIST: A research associate position is available to permit a qualified individual to join an ongoing program directed toward the purification of a neurotransmitter receptor complex. While experience is welcome, training will be provided in biochemical and immunological methods. Ultimate objectives include the study of the cell biology of the receptor. Send curriculum vitae and references to: **Joseph H. Neale, Ph.D., Department of Biology, Georgetown University, Washington, D.C. 20057.**

ORGANIC GEOCHEMIST. The Skidaway Institute of Oceanography welcomes applications for a full-time research position in organic geochemistry. Appointment will be at a level between postdoctoral associate and associate professor. A Ph.D. degree is required. Preference will be given applicants interested in research related to the accumulation, cycling, and degradation of natural organic compounds in marine sediments and/or to biologically mediated processes that affect the fate, transformation, and cycling of natural organic compounds.

Application for the position may be made by submitting, before 15 June 1983, curriculum vitae, statement of research interests, and the names of four individuals who can be contacted for reference purposes to:

Director
Skidaway Institute of Oceanography
P.O. Box 13687
Savannah, Ga. 31416

The Skidaway Institute is an Affirmative Action/Equal Opportunity Employer.

PHARMACOLOGIST, BIOCHEMIST, or NUTRITIONIST with less than 3 years of postdoctoral experience and an interest in studying essential metalloelement metabolism and pharmacologic activities of metal complexes in animal models of disease should apply for an open postdoctoral position offered by: **John R. J. Sorenson, University of Arkansas College of Pharmacy, 4301 West Markham, Little Rock, Arkansas 72205.**

PHYSIOLOGICAL OPTICS/VISUAL PSYCHOPHYSICS

ASSISTANT RESEARCH SCIENTIST I-III is desired, with one or more years of clinical and/or research experience in visual psychophysics or clinical vision testing, and Ph.D., M.D., or O.D. degree, for full-time appointment to active optometry/ophthalmology research laboratory in San Francisco Bay area. Duties will include research in various aspects of visual science, including new visual field techniques (layer-by-layer perimetry)—for example, Stiles-Crawford functions, Westheimer sensitization paradigms, hyperacuity, accommodation studies, and so forth. Individual will assist in training graduate and postdoctoral students. Experience with PDP-11 laboratory computer is desirable but not required. Salary range is from \$22,900 to \$25,200 per year, beginning 1 August 1983 or earlier. Please send curriculum vitae, statement of research interest and experience, and three references before 30 June 1983 (or until position is filled) to: **Professor Jay M. Enoch, Chairman, Search Committee, School of Optometry, University of California, Berkeley, Calif. 94720.** *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE IN HUMAN REPRODUCTION AND OBSTETRICS-GYNECOLOGY

Experience in in-vitro fertilization, semen analysis, sperm antibody testing and hamster ova in-vitro fertilization test required. Interest in research essential. Position involves running Andrology Laboratory and human in-vitro fertilization program. Minimum requirement Ph.D. Salary competitive. If interested, send curriculum vitae and 3 references to:

M. Yusoff Dawood, M.D.
Professor and Director
Division of Reproductive Endocrinology

or

William N. Spellacy, M.D.
Professor and Head
Department of Obstetrics and Gynecology
University of Illinois College of Medicine
840 S. Wood Street
Chicago, Illinois 60612

Affirmative action/equal opportunity employer

BIOCHEMISTRY MANAGER

Allergan, a leader in eye and skin care, is moving forward—join in our growth. We are searching for a talented manager to lead department and program activities including all biology and enzymology related to compounds of interest in ocular and dermal disease research.

This is an excellent career opportunity for an individual with a Ph.D. degree, postdoctoral experience, 7-10 years of high-quality industrial experience and the desire to establish a vigorous and productive effort in this area.

Allergan recognizes and rewards achievement.

We offer a substantial salary and benefits package, an atmosphere that encourages both personal and professional growth and a campus-like setting in Orange County, California.

For confidential consideration, please send your resume to:

Ann Schneider
Professional R&D Recruiter
ALLERGAN PHARMACEUTICALS
A SmithKline
Beckman
Company
2525 Dupont Drive
Irvine, CA 92713



Equal Opportunity Employer M/F

KING FAISAL UNIVERSITY COLLEGE OF MEDICINE DAMMAM, SAUDI ARABIA 1983-1984 Academic Year



King Faisal University, College of Medicine, invites applications from qualified men and women for the 1983-1984 academic year in the following disciplines:

**CHEMISTRY
BIOLOGY
PHYSICS**

**ANATOMY
BIOCHEMISTRY
EPIDEMIOLOGY
PATHOLOGY**

**MICROBIOLOGY
PHYSIOLOGY
IMMUNOLOGY**

Doctorate and minimum of 2 years teaching experience (medical school) required. Language of instruction is English. Interviews will be held in London and Houston.

Salaries are highly competitive and negotiable. Benefits include free furnished housing, educational allowances, air tickets to and from Saudi Arabia once each year for family of four, 60-day paid vacation, and liberal overweight baggage allowance. No Saudi income tax.

Send curriculum vitae with day and evening telephone numbers and the names and addresses of three references to:

Dr. Tawfik Tamimi
Dean, College of Medicine
c/o U.S. Recruiting Office
2425 West Loop South, Suite 540
Houston, Texas 77027

or

c/o U.K. Recruiting Office
29 Belgrave Square
London, S.W.1X, 8QB, England



DEUTSCHES PRIMATENZENTRUM GMBH
Kellnerweg 4 · D-3400 Göttingen
Telefon (0551) 34061 - 62

The German Primate Center is performing biologically and medically oriented research on and with nonhuman primates. Also it will keep and breed primates for other research institutions. The DPZ is in its construction phase now, it will be completed at the end of 1983.

The German Primate Research Center seeks a

SENIOR RESEARCH ASSOCIATE

(Wissenschaftlicher Mitarbeiter, BAT Ib)

Preference will be given to persons with interest and experience in the area of endocrine control of primate socio-sexual behavior. Ph.D. required.

DPZ applies the rules of the German public service (BAT). Please send curriculum vitae, list of publications, and names of three (3) references to:

Deutsches Primatenzentrum GmbH
Kellnerweg 4
D-3400 Göttingen
West Germany

POSITIONS OPEN

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE position available now to M.D. or Ph.D. for research on mammalian DNA polymerases and mechanism of DNA replication. Background in enzymology, protein chemistry, or nucleic acid metabolism preferred. Stipends range from \$16,000 to \$18,000, depending on qualifications. Submit curriculum vitae and three letters of reference to: **Dr. A. G. So, Department of Medicine and Biochemistry (R-99), University of Miami School of Medicine, P.O. Box 016960, Miami, Florida 33101.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION available 1 June 1983 for studies of monoamine and neuropeptide dynamics in retina and brain. Individuals seeking this position should have biochemistry or pharmacology training and experience using contemporary biochemical techniques (for example, HPLC, electrophoresis, and radioimmunoassay). Send curriculum vitae and names and addresses of three references to: **Dr. John D. Fernstrom, WESTERN PSYCHIATRIC INSTITUTE AND CLINIC, University of Pittsburgh School of Medicine, 3811 O'Hara Street, Pittsburgh, Pa. 15213.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION (research associate) available immediately in a research group studying molecular aspects of early mammalian embryogenesis, with emphasis on the teratocarcinoma cell system. Experience in molecular or cellular biology desirable. Please send curriculum vitae and two letters of reference to: **Chi Nguyen-Huu, Ph.D., Columbia University College of Physicians and Surgeons, Departments of Microbiology and Urology, 630 West 168 Street, New York, N.Y. 10032.** *Affirmative Action/Equal Opportunity Employer.*

TWO POSTDOCTORAL POSITIONS IN REPRODUCTIVE BIOLOGY are open immediately for the study of hormone-cyclic nucleotide regulation of Sertoli and spermatogenic cell function using in vitro systems and monoclonal antibody probes. No previous experience in reproductive biology is necessary, but extensive background in biochemistry and immunology is required. Knowledge of cell culture, gel electrophoresis, protein purification, monoclonal antibody production, and immunocytochemistry is desirable but not essential. Send curriculum vitae and three letters of reference to:

Dr. A. L. Kierszenbaum
Department of Anatomy and
The Laboratories for Reproductive Biology
University of North Carolina at Chapel Hill
106 Swing Building
Chapel Hill, N.C. 27514

Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION IN VIROLOGY available for studies on the mechanism of neutralization of poliovirus by monoclonal antibodies. Background in virology or immunology required. Send curriculum vitae and names of three references to: **Dr. Roland Rueckert, University of Wisconsin-Madison, Biophysics Laboratory, Madison, Wisconsin 53706.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available to study cAMP- and cytoskeleton-related processes relevant to the start of mitosis and cell differentiation in the rust fungi. Candidates having experience with immunocytochemical methodology and protein separation techniques will be preferred. Normally appointment is for 1 year with option to renew for a second year. Position available beginning September 1983. Starting salary: \$16,000 to \$17,000 per year, depending on qualifications. Send curriculum vitae and names of three references to: **Dr. Richard C. Staples, Boyce Thompson Institute at Cornell University, Tower Road, Ithaca, New York 14853.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately to continue research on epididymal physiology. Cultured principal cells will be used to study steroid control of cellular function, proteins secreted by different regions of the ram epididymis, and binding by testicular ram sperm of proteins secreted in vitro. Techniques of cell culture, electron microscopy, analysis of glycoprotein synthesis and secretion, membrane biology, and reproductive biology will be used. The successful applicant will be versed in one or more of these techniques. Send résumé and names and telephone numbers of three references to: **R. P. Amann, Animal Reproduction Laboratory, Colorado State University, Fort Collins, Colorado 80523.** *Colorado State University is an Equal Opportunity/Title IX Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION available summer 1983 to conduct mechanistic studies on dietary fat stimulation of mammary tumorigenesis in vivo. Experience in prostaglandins and/or tumor biology/metastases required; background in nutrition desirable. Send curriculum vitae and names of three references to: **Dr. Margot Ip, Grace Cancer Drug Center, Roswell Park Memorial Institute, 666 Elm Street, Buffalo, N.Y. 14263.** *An Equal Opportunity Employer, M/F.*

POSTDOCTORAL POSITION available immediately for studies on the effect of uremia on hepatic drug metabolism. Experience in techniques related to microsomal P-450 drug metabolizing enzymes and protein chemistry is highly desirable. Good salary support for 2 years. Send curriculum vitae and names and telephone numbers of three references to: **Dr. D. D. Shen, Department of Pharmaceutics, State University of New York at Buffalo, Amherst, New York 14260.**

POSTDOCTORAL POSITIONS. (i) Regulation of carbon metabolism at cryoenzymological and polyol/amino acid interaction levels in cold-adapted and non-adapted fungi. (ii) Regulation of cellulose decomposition in plant litter as effected by lignin quality/quantity, temperature, oxygen, and associated enzyme activity. Curriculum vitae and three letters should be sent to: **A. E. Linkins, Biology Department, Virginia Polytechnic Institute and State University, Blacksburg, Va. 24061,** by 3 June 1983.

POSTDOCTORAL POSITION (neuropharmacology, nutrition, physiology)—For the study of thermogenesis in animal models of obesity. Experience in obesity, pharmacology, and/or organ blood flow measurements desirable. Send curriculum vitae and two letters of recommendation to:

Barry E. Levin, M.D.
Chief of Neuropharmacology
Neurology Service (127)
VA Medical Center
East Orange, N.J. 07019

Position available immediately through the New Jersey Medical School, University of Medicine and Dentistry of New Jersey, Newark, N.J. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE. A position is available, for an individual with experience in enzyme purification, to purify and characterize protein kinases and substrates concerned with glycogen metabolism. The candidate should have a Ph.D. in biochemistry with at least 2 years of training in enzymology. The individual should be able to perform the various techniques involved in enzyme purification and characterization, including chromatography, electrophoresis, and centrifugation. The salary is \$19,000 per annum. Applicants should send résumés, including their social security number, to: **Indiana State Employment Service, 10 North Senate Avenue, Indianapolis, Ind. 46204,** attention: **W. F. Shepherd.** Identification number: 2005383.

PROFESSOR—PLANT MOLECULAR GENETICIST UNIVERSITY OF KENTUCKY

The Kentucky Tobacco Research Board has approved the establishment of a research program in the area of molecular genetics of *Nicotiana glauca* L. The focus of the research will be to utilize cellular and molecular techniques for the study of gene expression, regulation, transfer, and insertion in *Nicotiana*. The program will complement ongoing product modification research in the College of Agriculture.

The position will be filled by an established scientist of international stature in plant molecular biology. The successful applicant will be appointed as a professor in either the Department of Agronomy or in the Department of Plant Pathology. The salary is negotiable and will be commensurate with the qualifications of the individual. The position will be funded by, and the program will receive substantial support from, the Kentucky Tobacco Research Board through the Tobacco and Health Research Institute. Position open 1 July 1983. Closing date for applications is 1 July 1983 or until position is filled. Interested individuals should send résumé to: **Dr. C. O. Little, Associate Dean for Research, S-107 Agricultural Science Building North, College of Agriculture, University of Kentucky, Lexington, Kentucky 40546-0091.** Telephone: 606-257-3333.

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

POSITIONS OPEN

POSTDOCTORAL POSITION available in molecular parasitology to study the purine metabolic pathway in *Leishmania* using biochemical and molecular biological approaches. Experience in cell culture, cloning, molecular biology, and/or somatic cell genetics. Send résumé and names of three references to: **Dr. Buddy Ullman, Department of Biochemistry, University of Kentucky, Lexington, Ky. 40536-0084.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION for immunochemical study of plant disease resistance available July 1983. Experience in immunochemical techniques (monoclonal antibody production) necessary. Experience in plant cell culture, membrane isolation, or recombinant DNA is desirable. Send curriculum vitae and names of three references to: **Dr. Arthur R. Ayers, Department of Cellular and Developmental Biology, The Biological Laboratories, Harvard University, 16 Divinity Avenue, Cambridge, Mass. 02138.**

PRESIDENT

The Board of Regents of New Mexico State University (NMSU) invites nominations and applications for the position of president at the State's land-grant institution. The president is the chief executive officer of the university and reports to the Board of Regents. The position will be available 1 July 1984, upon the retirement of Gerald W. Thomas after 14 years of presidential service.

Applications, nominations, and inquiries will be received in confidence. Formal expressions of interest in becoming a candidate for the position will be received through 31 August 1983 by: **Dr. Peggy Elder, Chair, Presidential Search Committee, Box 3923, New Mexico State University, Las Cruces, N.M. 88003; telephone: 505-646-1722.** *NMSU is an Equal Opportunity/Affirmative Action Employer.*

REPRODUCTIVE PHYSIOLOGIST, Ph.D. to direct a laboratory for human in vitro fertilization in the Department of Obstetrics and Gynecology at the University of Washington. A full faculty position with start-up funds for an independent research program. Successful applicants must have a minimum of 2 years of postdoctoral experience and show evidence of research productivity in some aspect of reproductive biology. Please send curriculum vitae and the names of three references to:

Dr. Robert Steiner
Department of Obstetrics and Gynecology, RH-20
University of Washington
Seattle, Washington 98195

The University of Washington is an Equal Opportunity Employer.

RESEARCH ASSOCIATE 2-B/H. Ph.D. in biochemistry or an equivalent combination of education and experience is required; postdoctoral experience with organic synthesis of lipids. Performs organic synthesis of radioactive polyunsaturated fatty acids for use as substrates for prostaglandin and hydroxy fatty acid synthesis; performs incubation of subcellular particles from different tissues, including testicular tissue, leukocytes, and platelets; separates metabolites by high-performance liquid chromatography and performs characterization by ultraviolet spectroscopy, nuclear magnetic resonance spectroscopy, and gas chromatography-mass spectroscopy; defines physiological properties of prostaglandins and hydroxy fatty acids concerning mediating platelet aggregation. Salary: \$18,840 to \$21,000. Please contact: **Betty Williams, Ohio Bureau of Employment Services, 3434 Cleveland Avenue, Columbus, Ohio 43224.**

RESEARCH IMMUNOLOGIST

Applicants possessing a Ph.D. degree and at least 2 years of postdoctoral experience in cellular immunology are invited to apply for a research position in our leukocyte products laboratories. Applicants must be able to conduct independent studies relating to the development of human monoclonal antibodies, the synthesis and regulation of lymphokines, and/or the immune response to synthetic peptides. Send letter describing current and future research interest, curriculum vitae, representative reprints, and two letters of recommendation to: **Dr. Michael E. Wiebe, Associate Director, Research and Development, Blood Derivatives Program,**

NEW YORK BLOOD CENTER
310 East 67 Street
New York, N.Y. 10021

An Equal Opportunity Employer

Pharmacology

UCR/UCLA Program in Biomedical Sciences

The UCR/UCLA Program in Biomedical Sciences, which offers an accelerated M.D. curriculum jointly between the University of California, Riverside (UCR) and the University of California, Los Angeles (UCLA) School of Medicine, has a tenure track faculty opening as ASSISTANT PROFESSOR in MEDICAL PHARMACOLOGY in the Division of Biomedical Sciences at UCR. Teaching responsibilities will include 1) autonomic (including cardiovascular) pharmacology in a medical school pharmacology course, and 2) neurochemistry lectures in a medical school neurosciences course. Prior medical school teaching experience is strongly preferred. Applicants should have postdoctoral research experience, and should be able to continue with or develop an independent research program. The area of research is open, but should be consistent with the above teaching responsibilities. *The University of California is an Affirmative Action/Equal Opportunity Employer.* Applications, including a curriculum vitae, reprints, a statement of research goals, and the names of three references, should be sent to:



Richard A. Luben, Chair
Pharmacology Search Committee
Division of Biomedical Sciences
University of California, Riverside
Riverside, California 92521

Postdoctoral Scientist

Liposome Research and Development

SmithKline Beckman, a leader in pharmaceutical research, is seeking postdoctoral scientists to join an interdisciplinary research program in an environment designed to foster creative, innovative research and to promote personal and professional growth.

We consider postdoctoral studies to be of major importance in an individual's career and encourage publication of findings in leading journals and a full interaction with the scientific community.

Our postdoctoral appointments are of 1 year duration and with mutual agreement, renewable for a 2nd year. The successful candidate will undertake a multidisciplinary program on the development of liposomes to deliver drugs. We are particularly interested in evaluating:

- methods for the preparation of homogeneous liposome populations.
- release of liposome associated drugs in biological fluids.
- physical and chemical stability of liposomes and liposome associated drugs.
- methods for conjugation of ligands to the liposome surface.

Candidates are required to have a Ph.D. in Pharmaceuticals, Physical Chemistry or Biochemistry, with 0-3 years postdoctoral experience.

Preference will be given to candidates having a strong background in lipids and lipid bilayer membranes with relevant publications in major scientific journals.

We offer an excellent compensation and benefits program and the opportunity for personal and professional growth. Please send C.V. in confidence to: Mr. C.J. Elder, **SMITH KLINE & FRENCH LABORATORIES**, a division of SmithKline Beckman Corporation, 1544 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

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MOLECULAR GENETICISTS

Interferon Sciences, Inc. is a growing biotechnology company located in central New Jersey with easy access to metropolitan New York and Philadelphia. We are expanding our research efforts and several positions are open for scientists with experience in **Molecular Biology** at all levels.

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Personnel Director
783 Jersey Avenue
New Brunswick, NJ 08901

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Senior Scientist

CARDIOVASCULAR PHARMACOLOGY

A creative self-starter will find this a unique career opportunity to establish a biochemical research program in cardiovascular pharmacology for Hoffmann-La Roche, a leader in the pharmaceutical field. This position offers the benefits of collaboration with other research scientists in the cardiovascular section.

An understanding of myocardial ischemia as it relates to lipid metabolism is essential. Qualifications include a Ph.D. with 3-5 years of postdoctoral experience. Proven ability to publish scientific articles independently is desired.

Roche offers an outstanding compensation package, including attractive bonus and an environment that encourages professional growth.

Please forward resume in confidence to Eleanor M. Malone, Professional Employment and Staffing Specialist.



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Nutley, NJ 07110

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POSITIONS OPEN

KING SAUD UNIVERSITY/KING KHALID UNIVERSITY HOSPITAL, SAUDI ARABIA PROFESSORS OF ANATOMY

Two professors of anatomy, one specializing in gross anatomy and one in neuroanatomy, are required to take leading role in teaching and research planning at new University Hospital for tour of 1 to 2 years. Salary and benefits extremely competitive in minimum taxation situation. Recently updated and attractive housing arrangements and generous leave allowance. Position available now.

Applicants will be interviewed at the University of Colorado School of Medicine and successful candidates will be granted temporary clinical faculty rank as professor at the University of Colorado.

Please send application with updated curriculum vitae to: **Dr. John F. Nolte, Associate Professor and Acting Chairman, Department of Anatomy, University of Colorado School of Medicine, 4200 East Ninth Avenue, Box B-111, Denver, Colorado 80262. Equal Opportunity/Affirmative Action Employer.**

PROFESSOR OF MOLECULAR BIOLOGY, DEPARTMENT OF MOLECULAR BIOLOGY, UNIVERSITY OF GENEVA. Full-time appointment. The successful candidate is expected to teach at graduate and undergraduate levels and to lead a strong research program. Teaching in French is required, but a period of adjustment can be granted. Applications should be sent by 3 June 1983 to: **Secrétariat de la faculté des sciences, Université de Genève, 20 quai E. Ansermet, CH-1211 Genève 4, Switzerland,** where inquiries also can be sent.

TRANSFORMATION-ASSOCIATED PHOSPHOTYROSINATED PROTEINS

RESEARCH ASSOCIATE position available immediately for molecular biologist to investigate the identity of transformation-associated phosphotyrosinated cell surface proteins of human neoplastic cells, particularly those implicated in cell-cell communicative events, and clone the structural genes. Doctoral training in molecular biology with experience in molecular genetics, including cloning of eukaryotic cell genes, desirable. Send curriculum vitae and three letters of reference to: **Dr. Thomas Edgington, Program in Molecular Immunology and Pathobiology of Neoplasia, Research Institute of Scripps Clinic, La Jolla, Calif. 92037.**

RESEARCH INSTRUCTOR—The Department of Psychiatry, Washington University, invites applications for a nontenure-track, full-time faculty position, to begin during fall 1983. Candidates must have a Ph.D. with demonstrated competence in biostatistics and statistics and a strong interest in quantitative genetics. Proficiency in methodology development and data analysis is desirable. Salary commensurate with experience (\$18,000 to \$20,000). Send curriculum vitae and three letters of reference to: **Dr. B. K. Suarez, Department of Psychiatry, Washington University School of Medicine and The Jewish Hospital of St. Louis, 216 South Kingshighway, St. Louis, Missouri 63110.** Closing date: 1 August 1983. *An Equal Opportunity/Affirmative Action Employer.*

VETERINARY VIROLOGIST

The Diagnostic Laboratory, New York State College of Veterinary Medicine at Cornell, invites applications for a 12-month, tenure-track eligible faculty position in animal virology, with rank and salary commensurate with qualifications and experience. Degree requirements are a D.V.M., M.D., and/or Ph.D. with specific research training in animal virology. Ph.D. degree candidates should also have at least 2 years of postdoctoral experience. Duties include supervision of a diagnostic virology program and development of a comparative research program. Send curriculum vitae and three letters of recommendation by 1 September to: **Dr. Edward Dubovi, Diagnostic Laboratory, P.O. Box 786, Ithaca, N.Y. 14851-0786.**

POSITIONS OPEN

RESEARCH ASSOCIATE for Internal Medicine Protein-Sequencing Facility. Immediate opening for M.S. or B.S. with minimum of 1 year of work experience in manual micro amino acid sequencing and/or HPLC analysis. Salary negotiable, depending on experience. Send inquiries and résumé to: **Dr. Peter Daddona, Department of Internal Medicine, Medical Science I Room 4412, University of Michigan Medical School, Ann Arbor, Mich. 48109. The University of Michigan is a nondiscriminatory, Affirmative Action Employer.**

RESEARCH ASSOCIATE

Postdoctoral Position—Department of Physiology and Biophysics, University of Miami School of Medicine, to study mechanisms of gating in ionic channels. Techniques involve voltage clamp on myelinated nerve or skeletal muscle fibers and patch clamp for recording from single ionic channels of cultivated muscle or nerve cells. Emphasis is on voltage-activated Na and K channels. Prefer applicants with a background in electrophysiology. Available 1 November 1983. Minimum salary is \$13,380 plus fringe benefits. Send curriculum vitae and names of three references to: **Dr. Wolfgang Nonner, Physiology/Biophysics, R-430 UMED, P.O. Box 016430, Miami, Fla. 33101. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH PHYSICIST POSITIONS

The Department of Physics of the University of California, Irvine, has several positions available for research on new accelerator concepts. One experimental and one theoretical plasma physicist are required with a Ph.D. or equivalent experience. Positions are available 1 July. Send résumé, bibliography, and names of three professional references to: **Professor Norman Rostoker, Department of Physics, University of California, Irvine, Irvine, Calif. 92717. An Affirmative Action/Equal Opportunity Employer.**

RESEARCH SCIENTIST

The Denver Center for the Performing Arts has founded a research laboratory for the study of laryngeal and respiratory function, both as basic research and in application to vocal performance. The laboratory is located in Denver, Colorado. Its director is Dr. Wilbur J. Gould, and associate director, as a consultant, is Dr. Ingo R. Titze.

Responsibilities include developing and carrying out a research program in voice area, development of laboratory, grant writing, and cooperation with visiting scientists. Emphasis on voice physiology, acoustics, or perception. Demonstrated ability to design and report research. Background may be in physical or biological sciences, engineering, medicine, experimental phonetics/speech science, or research in vocal performance. Should have interest in vocal arts and enhancement of vocal performance in both live and recorded form.

Starting salary about \$27,500, depending on qualifications. Send letter of application with curriculum vitae, bibliography, and three or more letters of recommendation to:

**Dr. Ingo R. Titze
Department of Speech Pathology and Audiology
University of Iowa
Iowa City, Iowa 52242**

VETERINARIAN. The Weizmann Institute of Science seeks a veterinarian for its Experimental Animals Center. Candidates with experience in the health control of small laboratory animals are preferred. Experience in the virological, microbiological, and pathological control of large populations is desired. Applicants are invited to submit curriculum vitae, two references, and a letter describing their experience to: **Personnel Department, The Weizmann Institute, Rehovot, 76100, Israel.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP—RESEARCH ASSOCIATE to study molecular cloning and genetic engineering with animal tissues or plant cells. Send curriculum vitae to: **Dr. J. P. Thirion, Microbiology Department, Faculty of Medicine, Sherbrooke, Quebec, Canada J1H 5N4.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP IN BIOCHEMICAL PARASITOLOGY

Postdoctoral fellowship available to study purine and nucleic acid in pathogenic protozoans, especially leishmania and trypanosomes. Investigation includes metabolic pathways, enzymology, and use of tissue culture to study intracellular forms. Applicant should have experience in biochemistry, tissue culture, and analytical techniques used in biochemistry laboratory. Please send curriculum vitae to: **J. J. Marr, M.D., University of Colorado Health Sciences Center, Division of Infectious Diseases, Box B-168, 4200 East 9 Avenue, Denver, Colo. 80262. University of Colorado is an Equal Opportunity Employer.**

IMMUNODIAGNOSTICS

Becton Dickinson Postdoctoral Fellowship

POSTDOCTORAL POSITION available starting 1 October 1983 to study, evaluate, and participate in the development of new and novel nonisotopic immunoassay technology. Candidates must be well instructed in and have had some experience with protein immobilization and immunoassay. Salary: \$20,000 per year and a relocation allowance. This assignment will be at the Becton Dickinson and Company Research Center in North Carolina's renowned Research Triangle Park. Send curriculum vitae, a description of your research interests, and the names of three references to: **Dr. Daniel B. Wagner, Becton Dickinson and Company Research Center, P.O. Box 12016, Research Triangle Park, North Carolina 27709. An Equal Opportunity/Affirmative Action Employer.**

TRAINEESHIPS

NRSA POSTDOCTORAL TRAINEESHIP available for 1 July for a Ph.D. or M.D. Appointee will work in a laboratory or clinical setting within the **University of Washington Multidisciplinary Pain Center.** A commitment to animal, human laboratory, or clinical research on pain is essential and trainee must be a U.S. citizen or permanent resident. Physiological, behavioral, and social scientists will be considered. Send curriculum vitae and names of three references together with a statement of interest and career goals to: **C. Richard Chapman, Ph.D., Associate Director for Research, Department of Anesthesiology RN-10, University of Washington, Seattle, Wash. 98195.**

TRAINING PROGRAMS

POSTDOCTORAL TRAINING PROGRAM IN REPRODUCTIVE ENDOCRINOLOGY

NIH-supported, interdepartmental training program for those wishing to obtain experience in application of biochemical techniques to the study of reproductive hormones and diseases. Special areas of faculty interest include mechanisms of action of peptide hormones, receptor biochemistry, structure-function studies on glycoprotein hormones, hormonal regulation of human endometrium, effects of prolactin, and related topics. Candidates with doctoral degrees (M.D., Ph.D., D.V.M.) and a strong preparation in biochemistry preferred. Applicants (U.S. citizens or permanent residents only) should submit résumé, graduate transcript, and three letters of recommendation to: **Dr. L. E. Reichert, Director, Training Program in Reproductive Endocrinology, Department of Biochemistry, Albany Medical College, Albany, New York 12208.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL TRAINING PROGRAM IN IMMUNOLOGY

Comprehensive postdoctoral level training in all branches of immunology and immunogenetics is available through the Division of Immunology at Duke University Medical Center. This training includes HLA, tumor antigens, lymphokines, monoclonal antibodies, macrophages, T and B cell subsets and functions, and applications of advanced biochemical techniques. Fellowships are open to American citizens and foreign nationals with permanent resident visas holding the Ph.D., M.D., or equivalent degrees who have had less than 3 years of postdoctoral experience. Send letters of inquiry to: **Dr. E. G. Reisner, Box 3010, Duke University Medical Center, Durham, North Carolina 27710. An Equal Opportunity/Affirmative Action Employer.**

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But you also need flexibility in a portable data logging system. That's assured by the convenient HP-IL interface and 3421A adaptability. With the 41CV, you can easily program the system to do your measurements your way. HP's Digital Cassette Drive lets you store programs for easy recall. And you can also store data for later analysis in the lab. With HP's Thermal Printer/Plotter, you can see measurement results immediately. With the 3421A, you can trade accuracy for speed. Choose $5\frac{1}{2}$ -digit resolution to detect small changes. Or, if you're interested in speed, select a fast 30 readings per second with $3\frac{1}{2}$ -digit resolution. When ac power is available, you can plug into an outlet, but if power fails you have battery backup for unin-

terrupted operation. In remote locations, you can operate totally from battery power. A "sleep" mode conserves power by putting system components on standby until needed. With HP-IL you can even upgrade to the more powerful HP85 personal computer for tougher data-logging tasks.

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Whether you're in a manufacturing plant, research lab, solar powered building, ship, airplane, or balloon... HP's new portable data logging system can give you precision measurements at low cost. A complete system, including the 3421A, 41CV, Digital Cassette Drive, Thermal Printer/Plotter, and HP-IL interface, goes for less than \$3100.* So pack this system up in its convenient carrying case and take it along... wherever you go.

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