

ers and readers. Outside the professional audience the issue will not be color versus black-and-white, but rather how to use color effectively.

For the most part, Schmid is content with the task of explaining, taking the reader step by step through the field of graphics. His text is clear and complete enough to be useful to anyone who wants to understand the problems of graphic design—and ways to cope with them.

One of Schmid's themes is that graphics can be used for some rather ordinary purposes and still live up to the highest standards of truthfulness, accuracy, clarity, and aesthetics. The test of good graphics is whether the audience gets the message clearly, accurately, and memorably. Thus, Schmid's concern with research extends to empirical studies in cartography, psychology, and related fields aimed at assessing readers' responses to different graphical approaches. So far the results have not been as helpful as he had hoped, but he is optimistic about the payoff from further experimentation.

In his concluding chapter Schmid turns to the efforts that have been made to cope with the important problem of representing statistical error in graphics presentations. His approach to this subject is thorough and informative. His examples range from simple modifications of conventional graphics (such as using black and gray bars to differentiate between data that are statistically significant at the 95 percent confidence level and those that are not) to more ambitious innovations, some similar to some of those shown by Tufte.

The essential problem in presenting statistical information is deciding what to express in words, what to express in tables, and what to show in graphs—and how to integrate these three modes of communication to convey a message most effectively. Tufte turns to the matter of integration in his concluding chapter. He deplores the tendency to treat charts and tables as if they were entirely independent of the text and suggests how words and pictures can work together. His discussion is sensible. But unfortunately, in applying his precepts to his own book, he strains too much for integration, running text and charts together in ways that are not effective and failing to provide well-conceived headings for charts that must stand alone. Overall, the layout of the book reflects considerable ingenuity, but it creates enough problems to increase one's respect for some of the conventions of bookmaking. The design of complicated books is an exceedingly difficult task. Tufte as au-

thor, co-designer, and publisher of his book was able to lavish attention on design details and quality of production. If he fell short of achieving his goals, he must be credited with a dedicated effort to produce a handsome and unconventional book.

The Tufte and Schmid books can hardly be considered companion volumes, but neither can they be considered substitutes for one another. Anyone who peruses them both will surely gain a broader perspective on the status of and trends in graphics.

HERBERT C. MORTON

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Nectar Production

The Biology of Nectaries. BARBARA BENTLEY and THOMAS ELIAS, Eds. Columbia University Press, New York, 1983. x, 260 pp., illus. \$33.50.

In this brief overview of the biology of nectaries the editors have brought together much of the new and exciting research dealing with these interesting nectar-secreting organs of the flowering plants. Detailed knowledge of how nectaries work and what their potential significance is has been unfolding during the past few decades, and the unfolding has accelerated in recent years with the dramatic advances in instrumentation. However, questions as apparently fundamental as how nectar is secreted from these glands are still unresolved. The mechanism by which nectar moves from the site of production (gland) to the area of presentation (exterior of plant) is a matter of controversy. The alternatives are transportation via vesicles that fuse to the plasmalemma and release their nectar into the wall area (granulocrine secretion) and transport of individual sugar molecules across the membrane by some carrier molecule (eccrine secretion). That it does not present a decision between these alternatives is not a weakness but a strength of this work. By objectively reviewing the possibilities the authors whet the reader's appetite for further investigation into these intriguing problems.

Some of the other questions that are posed by the various authors but left unanswered include: What is the switch mechanism that determines when nectar secretion starts and stops, as in the case when secretion ceases when "some critical amount" is reached and resumes after some of the nectar has been re-

moved by floral visitors? What is the mechanism that allows some flowers to regulate the concentration of sugar in nectar so that the viscosity of the solution remains relatively constant during the day? Is there any taxonomic significance to the distribution of extrafloral nectaries among the families of angiosperms? Can extrafloral nectaries that are found on certain crop plants attract sufficient numbers of predators to offer an effective alternative to the use of pesticides in tropical agricultural systems?

Possibly one of the most valuable aspects of this book is the exposition in the last chapter of what questions to ask, what data to collect, how to collect your data, how to calculate the amount of sugar per flower, and what field equipment you will need if you plan to study nectar.

Overall this book should, as the editors indicate, serve the function of stimulating more research into the biology of these fascinating nectar-secreting organs. I enthusiastically recommend it to anyone interested in the ecological and coevolutionary relationships that exist among plants and animals.

C. EUGENE JONES

Department of Biological Science,
California State University,
Fullerton 92634

Books Received

The A to Z of Women's Health. A Concise Encyclopedia. Christine Ammer. Facts On File, New York, 1983. 482 pp. \$19.95.

Academic Medicine. Present and Future. Papers from a conference, North Tarrytown, N.Y., May 1982. John Z. Bowers and Edith E. King, Eds. Rockefeller Archive Center, North Tarrytown, N.Y., 1983. x, 242 pp., illus. Paper, \$15.

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Advances in Shock Research. Vols. 9 and 10. (Continued on page 1212)

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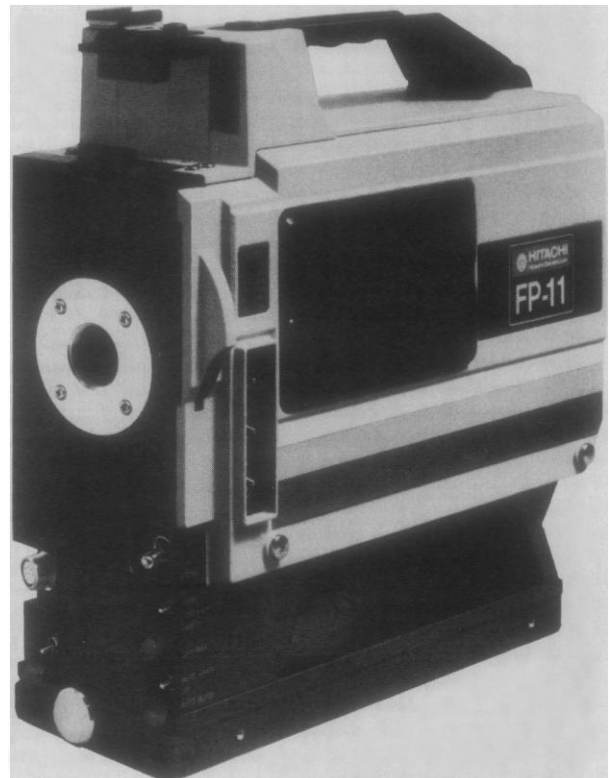
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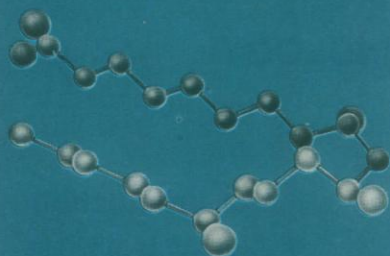
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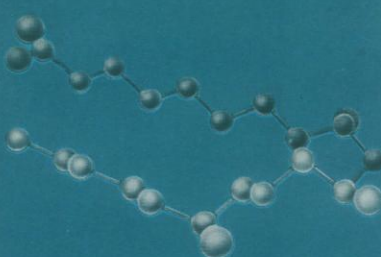


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(Continued from page 1172)

- Proceedings of a conference, Smugglers' Notch, Vt., June 1982. Liss, New York, 1983. Vol. 9. Sherwood M. Richard and Robert R. Wolfe, Eds. xviii, 294 pp., illus. \$70. Vol. 10. Sherwood M. Reichard, David G. Reynolds, and H. Richard Adams, Eds. xiv, 228 pp., illus. \$54.
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- Geology of Offshore Ireland and West Britain.** D. Naylor and P. Shannon. Figures prepared by Mary Davies. Graham and Trotman, London, 1982 (U.S.

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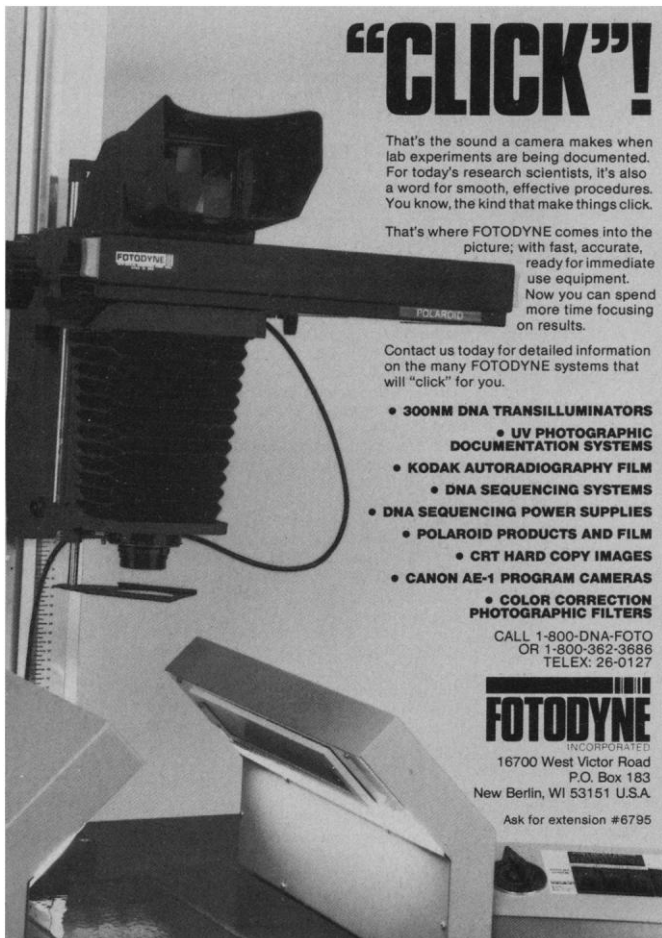
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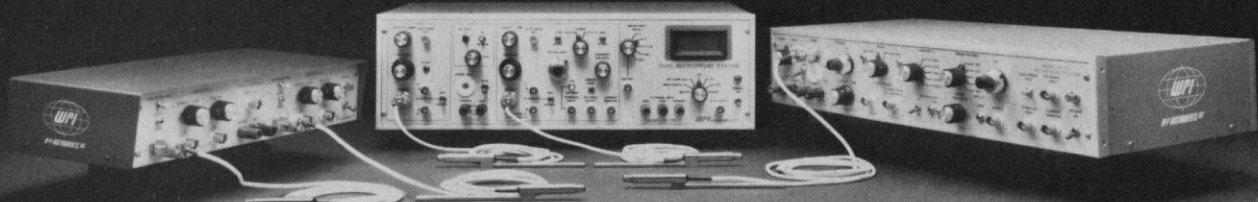


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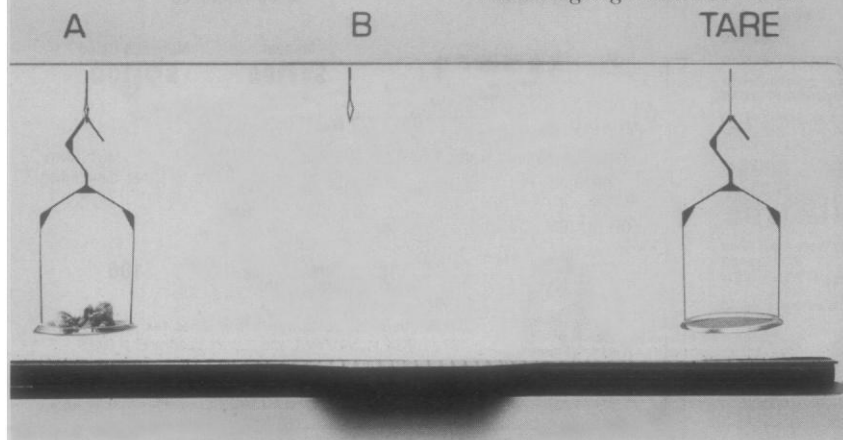


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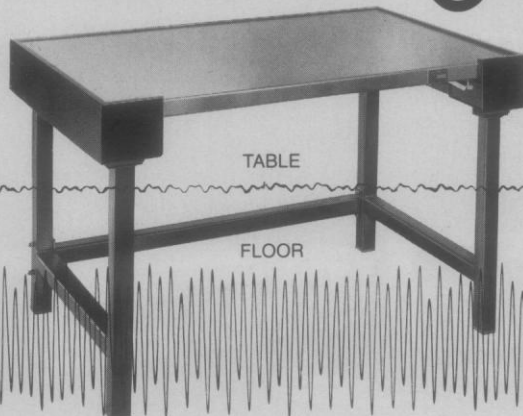


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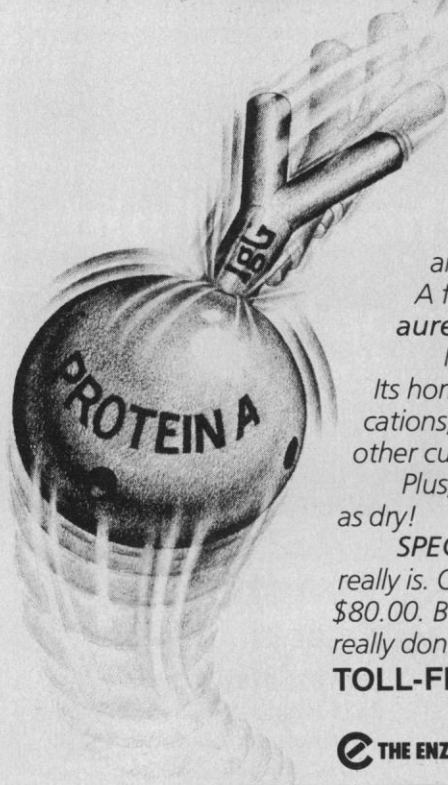
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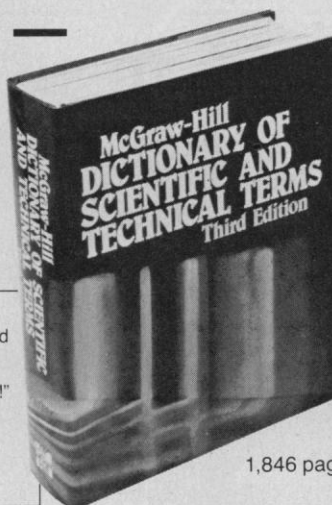
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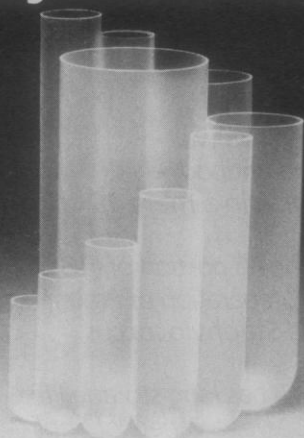
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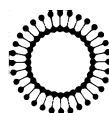
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Applications are solicited for two positions at the rank of assistant professor in the Department of Physiology, Yale University School of Medicine. Candidates must hold a M.D. or a Ph.D. degree with experience and interest in membrane biophysics and/or membrane transport processes. One successful candidate should have as research emphasis studies of single channels in excitable cell membranes or artificial membranes. A second successful candidate should have as field of interest the structure-function relation of membrane components involved in cellular or epithelial membrane transport.

Opportunities are available for both collaborative and independent research and for graduate and medical student teaching.

Please send complete curriculum vitae, including publications and the names and addresses of three references, to:

Emile L. Boulpaep, M.D.
Chairman, Department of Physiology
Yale University School of Medicine
333 Cedar Street
P.O. Box 3333
New Haven, Conn. 06510

Yale University is an Equal Opportunity/Affirmative Action Employer.

Ph.D. as **ASSOCIATE RESEARCH SCIENTIST** for interdisciplinary research study of role of vasoactive mediators in relation to physiologic adjustments to stress. Experience with RIA and HPLC required. Send curriculum vitae to: **Dr. S. A. Stalcup, Babies Hospital South-101, 630 West 168 Street, New York, N.Y. 10032.** *Columbia University is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL TRAINING IN MOLECULAR, CELLULAR AND DEVELOPMENT BIOLOGY

POSTDOCTORAL POSITIONS are available in the Department of Biology at the University of Rochester. Faculty available for training include:

- Robert Angerer—Gene expression in early development.
- Karl Drlica—Bacterial chromosome structure and function.
- Thomas Eickbush—Organization, regulation and evolution of the silkworm chorion gene families.
- Martin Gorovsky—Gene organization, reorganization and expression in *Tetrahymena*.
- Stanley Hattman—DNA methylation systems in pro- and eukaryotes.
- David Hinkle—DNA replication in yeast and bacteriophage T7.
- Lasse Lindahl—Regulation of ribosomal protein synthesis.
- Joanna Olmsted—Cellular control of cytoskeleton assembly.
- Satya Prakash—Structure, function and regulation of cloned DNA repair genes of *Saccharomyces cerevisiae*.
- Edwin Stephenson—Molecular biology and genetics of *Drosophila* development.
- William Wasserman—Regulation of meiosis and mitosis in oocytes and embryos.
- Abraham Worcel—Chromatin structure and function.

Applications should state the faculty member(s) with whom the candidate wishes to work and should include curriculum vitae, references, and summary of research interests. Inquiries or applications should be sent to:

Professor Martin A. Gorovsky
Chairman of Biology
University of Rochester
Department of Biology
Rochester, N.Y. 14627

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ASSISTANT OR ASSOCIATE EDITOR

Major interdisciplinary weekly scientific magazine seeks an assistant or associate editor with a strong background in the physical sciences. Responsibilities will include editing manuscripts for clarity and consistency and communicating directly with authors and reviewers. Preference will be given to candidates with an advanced degree in physical science and a background in scientific journal or book publication. Minimum requirements are a B.S. degree in physical science, an excellent command of English, and previous editing experience. Accuracy and attentiveness to detail and the ability to meet deadlines are essential. Level of the position and salary will be commensurate with experience. Please submit résumé, with cover letter including salary requirements, to: **Box 242, SCIENCE.**

Equal Opportunity Employer

ASSISTANT OR ASSOCIATE PROFESSOR

**Department of Pharmacy
University of California (UCSF)
San Francisco, California**

The Department of Pharmacy invites application for a tenure-track position at either the assistant or associate professor level in pharmacy and pharmaceutical chemistry. The applicant should have a Ph.D. (or equivalent degree) with research experience and interest in mechanism and time-course of drug action in humans or whole animals, that is, pharmacodynamics/pharmacokinetics. Primary research may be in:

- 1) Quantifying pharmacodynamics.
- 2) Interactions of drugs with complex physiologic systems, for example, the nervous, endocrine, or immune systems.
- 3) Mathematical modeling.
- 4) Pertinent computer and data analysis methodologies.

Cooperative research within the Departments of Pharmacy and Pharmaceutical Chemistry and with other Departments on campus is encouraged.

Teaching responsibilities will be in courses in the professional curriculum and in graduate and elective courses in topics related to the time-course of drug action.

For consideration, send curriculum vitae, a summary of current research, and a concise outline of future research by 1 November 1983 to:

Thomas N. Tozer, Ph.D.
Professor of Pharmacy and
Pharmaceutical Chemistry
Department of Pharmacy, 926-S
University of California
San Francisco, Calif. 94143

UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

MOLECULAR BIOLOGIST

We are seeking applicants for a PhD level position in a new and innovative research program in the area of genetic engineering.

Applicants should have extensive experience and skills in recombinant DNA technology. Training in bacterial, fungal and plant cell genetics, cloning and expression of eukaryotic gene products is desirable.

This is an excellent opportunity with a Fortune 100 Corporation in the midwest. If you can accept the challenge, send your resume in confidence to:

Box 237, SCIENCE

**Applicants Must Be U.S. Citizens
Or Possess A Permanent Visa**

AN EQUAL OPPORTUNITY EMPLOYER M/F/H/V

Microbiologist

MOLECULAR DIAGNOSTICS, INC. is a recently organized biotechnology research group, affiliated with BAYER AG of West Germany. The company functions independently as a basic research facility guided by an internationally recognized Scientific Board. Areas of research include molecular and cellular genetics, nucleic acid chemistry, and immunochemistry. We are currently expanding our scientific staff and offer an outstanding opportunity for a Ph.D. Microbiologist with appropriate qualifications.


Applicants should have demonstrable ability and interest in developing antibody-based immunochemical assays for the rapid diagnosis of human pathogens. Candidates' expertise must include the growth of a variety of human pathogens and serological analysis using immunofluorescence and other analytical techniques. Knowledge of protein chemistry and monoclonal antibody technology would be desirable.

Applicants must have at least two years of postdoctoral experience and must demonstrate capabilities for carrying primary research program responsibilities and for directing scientific personnel. The candidate should be able to function effectively in an informal but challenging research environment which includes academic ties. This position, which is available immediately, offers attractive compensation, generous benefits, and an excellent opportunity for personal and professional growth.

Molecular Diagnostics is located in a large, attractive, and well-equipped facility, 10 minutes from New Haven and 90 minutes from New York City.

Please send a curriculum vitae along with a statement of research interest and capabilities in confidence to Research Director, Molecular Diagnostics, Inc., 400 Morgan Lane, West Haven, CT 06516.

An Equal Opportunity Employer M/F

*molecular
diagnostics, inc.* 

POSITIONS OPEN

The Department of Pathology at the University of Illinois has an immediate opening as **ASSISTANT PROFESSOR/DIRECTOR** of Diagnostic Electron Microscopy Laboratory. The appointee is expected to supervise and train technologists in electron microscopy as well as supervise the processing of all tissue specimens. Other duties include the instruction of residents and graduate students in the use and applications of electron microscopy. Candidates must possess a doctoral degree with at least 10 years of experience in transmission and scanning electron microscopy techniques as well as in the supervision of technical personnel in ultrastructural research. The candidate must be qualified in cytochemical, ultrastructural, and autoradiographic methods applied to electron microscopy. For fullest consideration applications should be received by 7 October 1983. *An Equal Opportunity/Affirmative Action Employer.* Direct inquiries and submit curriculum vitae to: **Abel L. Robertson, Jr., M.D., Ph.D., Department of Pathology, University of Illinois, College of Medicine, 1853 West Polk Street, Chicago, Illinois 60612.**

The University of Washington School of Pharmacy invites applications for a position at the **ASSISTANT OR ASSOCIATE PROFESSOR** level in **PHARMACEUTICS**. Applicants must possess the Ph.D. degree and a background in pharmacokinetics. The appointee will teach at the graduate and undergraduate levels. Maintenance of an active research program is required. Candidates with research interests in the application of pharmacokinetic and biochemical techniques to the elucidation of fundamental mechanisms of drug disposition and metabolism are preferred. Interested applicants should forward a résumé, official transcripts, a brief description of research interests, and three letters of reference by 1 November 1983 to: **John T. Slattery, University of Washington, Department of Pharmaceutics, BG-20, Seattle, Washington 98195.** *The University of Washington is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/ASSOCIATE PROFESSOR OF PHYSIOLOGY

A tenure-track position is open in the Department of Physiology in the School of Medicine, University of Missouri-Columbia. The successful applicant is expected to establish an independent laboratory for cardiovascular research at the cellular, biophysical, or molecular level. The department currently has seven laboratories conducting cardiovascular research with ample opportunity for interaction. Other duties will include teaching in the medical physiology course and at the advanced graduate level. Send curriculum vitae and list of three references to:

Allan W. Jones
Chairman

Department of Physiology
M411 Medical Science Building
University of Missouri School of Medicine
Columbia, Mo. 65212

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

The Institute for Pure and Applied Physical Sciences (IPAPS) is looking for an **ASSISTANT RESEARCH PHYSICIST** with a Ph.D. in physics and advanced knowledge of superconductivity, magnetism, valence instabilities, materials science, and catalysis. Work will be in the areas of experimental catalysis, surface science, magnetism, and valence instabilities. Applicant must have a background in the fields of magnetism, catalysis and surface science, and experience with cryogenics, ultra-high vacuum techniques, and magnetic measurements. Specific experience in material synthesis and analysis including powder metallographic analysis is required. The salary range is \$22,900 to \$26,800. Send inquiries by 15 October 1983 with résumé to: **Bethany Gardella (S), IPAPS B-029, University of California, San Diego, La Jolla, Calif. 92093.** *The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer.*

FACULTY OPENING. Position available for Ph.D. in immunology (microbiology or cell biology), with appropriate experience and bibliography, to be appointed as **research assistant professor**. Interests of laboratory are lymphocyte-endothelial cell interaction, autoantibody synthesis in cell culture, immunological basis for chronic inflammation. Send curriculum vitae to: **Dr. Morris Ziff, Director, Harold C. Simmons Arthritis Research Center, University of Texas Health Science Center, 5323 Harry Hines Boulevard, Dallas, Texas 75235.** *An Equal Opportunity Employer.*

POSITIONS OPEN

BIOPHYSICS/BIOCHEMISTRY

Our laboratory is investigating the molecular biology of fibrinogen and plasma fibronectin. We are seeking someone with a biophysical chemistry background, preferably including protein structure conformation and assembly. This is a challenging research opportunity for an individual who is capable of independent investigation in a programmatic setting. The position is available either at a postdoctoral (M.D./Ph.D.) or faculty level (University of Wisconsin Medical School), depending upon qualifications and experience. Send curriculum vitae plus statement of background, career goals, and research interests to: **Dr. Michael W. Mosesson, Department of Medicine, Mount Sinai Medical Center, 950 North 12 Street, Milwaukee, Wisconsin 53233.**

CANCER BIOLOGIST NORRIS CANCER CENTER UNIVERSITY OF SOUTHERN CALIFORNIA

The newly opened Norris Cancer Center at the University of Southern California is seeking a cancer cell biologist to develop a new program in the general area of urological cancer biology. Applicants should possess a Ph.D. or M.D. degree and have expertise in the area of tumor biology in one or more of the following areas: in vitro cultivation of human tumors, tumor cell heterogeneity, metastasis, invasion, angiogenesis, growth factors, chemotherapeutic assay systems, cell differentiation, and epithelial cell biology. The appointment will be made at the level of assistant or associate professor with the possibility of a joint appointment in a basic science department. The Division of Urology has a large patient base, and will commit substantial funding and resources for the development of this new program. The successful applicant will be expected to develop a strong, innovative, independent program and to integrate with other research currently under way at the Norris Cancer Center. Approximately 900 square feet of new space is available at this time and the possibilities for collaboration, and so forth, are outstanding.

Send curriculum vitae and the names of three references to:

Dr. Peter Jones
Chair, Search Committee
Department of Biochemistry
University of Southern California
School of Medicine
2025 Zonal Avenue
Los Angeles, Calif. 90033

DIRECTOR, NUCLEAR MAGNETIC RESONANCE CENTER. Scientist (Ph.D. or M.D.) with extensive background in NMR to direct NMR Center for Non-Invasive Diagnosis. The facility is a cooperative venture between The University of New Mexico (UNM) and The Los Alamos National Laboratory (LANL). The Center will serve as a focus for basic and clinical research as well as instrument development in NMR in cooperation with existing programs at LANL and UNM. Active research programs and experience in both NMR imaging and spectroscopy highly desirable. Academic rank at The University of New Mexico and appointment at The Los Alamos National Laboratory appropriate to experience. Send curriculum vitae to: **Thomas B. Tomasi, M.D., Ph.D., Chairman, Department of Cell Biology, Director, The University of New Mexico Cancer Center, Albuquerque, N.M. 87131.**

FACULTY POSITION FOREST MANAGEMENT SCIENCE DUKE UNIVERSITY

Responsible for teaching graduate courses, active research, and expanding forest management science program combining forestry, economics, business, and systems analysis. Requires Ph.D. with at least one degree in forestry and background in operations research, managerial economics, quantitative methods, or computer applications. Preference given applicants with training or experience in application of management sciences to forest resources. Position is tenured. Submit curriculum vitae, representative publications, and three references by 30 November to: **Dean Benjamin A. Jayne, School of Forestry and Environmental Studies, Duke University, Durham, N.C. 27706.**

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

The University of Western Ontario Faculty of Medicine CHAIRMAN Department of Physiology

Applications are invited for the position of chairman of the Department of Physiology, The University of Western Ontario, London, Ontario, Canada. The department, actively involved in education and research, consists of 16 full-time faculty members and 17 part-time members. The department has strong research interests in the cardiovascular and neuroscience fields and is a partner in an MRC Group in Reproductive Biology. The position requires an individual with strong leadership and administrative skills, a commitment to academic excellence, and a distinguished record of research and teaching.

Applications should be sent by 1 December 1983 to:

Dr. M. J. Hollenberg
Dean, Faculty of Medicine
The University of Western Ontario
Health Sciences Centre
London, Ontario, Canada N6A 5C1

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

The University of Western Ontario is an Equal Opportunity Employer.

DIRECTOR Center for Resource and Environmental Policy Research Duke University

Responsible for developing programs and directing research in national and international policy issues related to natural resources. Participating faculty represent business, ecology, economics, engineering, forestry, public policy, law, and resource management fields. Current research in public regulation of resource markets, risk analysis, political economy of resource development, decision theory, and investments in nonindustrial private forestry.

Requires Ph.D., administrative experience, and significant record of research related to Center's activities. Position is tenured, salary commensurate with experience. Submit curriculum vitae and three references by 30 October to: **Dr. W. F. Hyde, School of Forestry and Environment Studies, Duke University, Durham, N.C. 27706.**

An Equal Opportunity/Affirmative Action Employer

FOUR TENURE-TRACK FACULTY POSITIONS are available for the 1984-1985 academic year. Applications will be considered for all academic levels, including named professorships. The successful applicants will be chosen from among:

MOLECULAR BIOLOGY OF GENE EXPRESSION OF METAZOANS

POPULATION GENETICS AND MATHEMATICAL ECOLOGY

or outstanding candidates in related areas. Coordinated applications are encouraged. Successful candidates will be expected to have demonstrated commitment to quality teaching and a vigorous, independent research program. Please submit curriculum vitae (including biographic data), short statement of research objectives, names of at least five referees, and selected reprints to: **The Chairman, Department of Zoology, University of Texas at Austin, Austin, Texas 78712, before 1 November 1983.**

The University of Texas at Austin is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION—Section Head, Geriatrics and Gerontology. The Department of Medicine of The Medical College of Wisconsin is recruiting an **internist** with training or interest in geriatrics and research related to aging. Responsibilities include enhancement of ongoing research programs and administration of the section, as well as the clinical and teaching programs of the section. Faculty appointment and salary will be commensurate with experience. Send curriculum vitae and references to: **Thad C. Hagen, M.D., Professor and Co-Chairman, Department of Medicine, The Medical College of Wisconsin, 8700 West Wisconsin Avenue, Milwaukee, Wis. 53226.**

NATIONAL SCIENCE FOUNDATION (NSF)

Division of Science Resources Studies

NSF is seeking qualified candidates for position of **Head, Scientific and Technical Personnel Studies Section**. Section is responsible for development and analysis of quantitative information on the nation's science and technology human resources. Incumbent supervises planning and execution of large-scale surveys, central federal clearinghouse responsibilities, in-house studies, and analyses of data from a multiplicity of sources. This Senior Executive Service position has a salary range of \$56,945 (ES-1) to \$61,515 (ES-3).

An advanced degree in subject related to statistics, human resource studies, or science and engineering is required. Experience in the planning and direction of diverse human resources study projects, including large surveys, with emphasis on the professional personnel area is also essential.

Applicants should **telephone: Margaret Cademartori on 202-357-7857** to request Announcement EPS 83-9S for complete qualification requirements and application procedures. Applications must be received by 21 October 1983.

*Affirmative Action/Equal
Opportunity Employer*

MANAGING EDITOR

Major weekly science magazine seeks a managing editor with demonstrated administrative abilities to oversee and coordinate the activities of its editorial, writing, and production departments.

Mandatory requirements include a strong background in science and English and at least 7 years of supervisory experience in publishing or a related endeavor. Candidates should be familiar with all phases of journal production as well as with copyright laws and the peer review process. Preference will be given to those with excellent interpersonal and communicative skills and the ability to interact with a variety of professionals. The managing editor will participate in the immediate and long-term planning of the weekly issues of the magazine and will act as liaison between the different departments to increase their efficiency and facilitate the meeting of deadlines.

Please submit résumé with cover letter, including salary requirements, to: **Box 243, SCIENCE**.

Equal Opportunity Employer

MEDICAL AND SCIENTIFIC NMR POSITIONS

Nicolet is expanding operations to better serve the high resolution nmr and nmr imaging community. The expansion provides opportunities for personal involvement, challenge and growth in the atmosphere of a rapidly growing company located in the attractive San Francisco Bay Area. There are immediate openings for positions of:

Imaging Project Leader
Software Development Engineers
High Res./Solids Probe Design
NMR Systems Engineer
Applications Chemist
Marketing Product Manager
Systems Test Spectroscopist
Field Service Engineers

Nicolet offers a stimulating scientific environment, competitive compensation and benefits including stock purchase, profit sharing and pension plans. Please submit your resume indicating the opening of interest to:

**Personnel Dept.
NICOLET MAGNETICS CORP.
255 Fourier Avenue
Fremont, CA 94539**

An Equal Opportunity Employer.

 **Nicolet**

PHYSIOLOGIST/ BIOLOGICAL ENGINEER

Chemical Research and Development Center

An employment opportunity exists for a physiologist or biological engineer. Major duties include the following: planning, initiation, and supervision of exploratory investigations dealing with respiratory and other physiological parameters as affected by the encumbrance of protective equipment under the influence of exercise and various environmental stresses; directing investigations and studies to assess facial, head, and body anthropometrics as related to protective devices for face, eye, head, and body protection against chemical and biological hazards, assessing the impact of dead space inhalation and exhalation, breathing resistances, face and nose cup seal pressures, and so forth, on the wearability of protective masks under various environmental stresses; and conducting studies to evaluate the effect of protective equipment on man's ability to hear, see, and perform tactical mission requirements. Details on position may be obtained from: **David English, telephone: 301-671-4283**. Chemical Research and Development Center is located at Aberdeen Proving Ground, Maryland, on the western shore of the beautiful Chesapeake Bay with in easy driving distance of Baltimore, Washington, and Philadelphia. For application materials and a descriptive brochure, write:

**Commander
Chemical Research and Development
Center
Attention: DRSMC-CLW-C (A)
Aberdeen Proving Ground, Md. 21010**

Research Manager New Drug Discovery Laboratories Japan

We are seeking a Japanese citizen to head an expanding pharmaceutical research laboratory in Japan. This individual will be responsible for staffing and supervising a new group primarily involved in the synthesis and evaluation of new pharmaceutical agents as part of the research division of a major multinational pharmaceutical company headquartered in the U.S. The manager will closely coordinate the work of his/her group with related activities in other laboratories of the company, and will be expected to travel frequently to the U.S. after relocation to Japan.

The optimal candidate will have industrial experience in drug discovery research and fluency in written and conversational English, preferably acquired during past or present residency in the United States. A strong background in synthetic chemistry is preferred, but biochemical training with appropriate synthesis experience will be considered.

Resumes may be submitted to:

Box 257, SCIENCE

An equal opportunity employer

POSITIONS OPEN

BIOCHEMIST—M.S./B.S. with knowledge of biological/biochemical correlations. Experience in biochemical research working with animals. Familiarity with high-performance liquid chromatography highly desirable. To study the mechanism of action of drugs and to discover new potential drugs using HPLC and performing enzyme assays. Submit curriculum vitae to: **V. G. Jordan, Senior Staffing Specialist, CIBA-Geigy Corporation, Summit, N.J. 07901.**

BIOTECHNOLOGY, BIOCHEMICAL ENGINEERING. Department of Chemical Engineering and Materials Science, University of Minnesota, seeks Ph.D. with strong background in biotechnology/biochemical engineering for tenure-track position as assistant professor. Candidates should have a distinguished academic record, outstanding potential for creative research in biotechnology/biochemical engineering, and a commitment to both undergraduate and graduate instruction in chemical engineering. Nominations or applications with résumé and a list of three references should be submitted by 15 November 1983 to: **Professor A. G. Fredrickson, 151 Amundson Hall, University of Minnesota, 421 Washington Avenue, SE, Minneapolis, Minn. 55455.** *The University of Minnesota is an Equal Opportunity Employer and specifically invites and encourages applications from women and minorities.*

EXECUTIVE DIRECTOR RESEARCH CORPORATION OF THE UNIVERSITY OF HAWAII

The Board of Directors of the Research Corporation of the University of Hawaii invites nominations and applications for the position of executive director beginning on or about 1 May 1984, to direct, manage, and administer the affairs of the Research Corporation; coordinate and develop relationships with the University of Hawaii, the State of Hawaii, federal agencies, industry, private sector, and other academic and research institutions; execute the basic policies established by the Board and determine and control the overall objectives, programs, and operations of the Research Corporation; approve contracts, joint agreements, annual and other reports.

Minimum qualifications: 5 years of top-level management experience—director or deputy director—in research administration or related university, governmental, or private organization; doctoral degree preferred. Professional résumé or curriculum vitae and names and addresses of four references should accompany each nomination or application.

Send nominations or applications to: **Dr. Howard P. McLaughan, University of Hawaii, 2540 Maile Way, Honolulu, Hawaii 96822.**

Nominations must be postmarked no later than 30 September 1983; applications no later than 15 October 1983.

An Equal Opportunity Employer

Tenure-track FACULTY POSITION in organic chemistry with preference for biochemistry. Level of appointment commensurate with experience. We seek a new faculty member who will bring strength in research and teaching on both the graduate and undergraduate levels, to the department of chemistry. Applicants should send curriculum vitae, statement of research and teaching interests, and arrange for transmission of three letters of recommendation to: **A. A. Bothner-By, Chairman, Organic Faculty Recruiting Committee, Department of Chemistry, Carnegie-Mellon University, Pittsburgh, Pa. 15213.** *An Affirmative Action/Equal Opportunity Employer.*

CARNEGIE-MELLON UNIVERSITY, DEPARTMENT OF CHEMISTRY, PROFESSOR AND HEAD. Outstanding opportunity to hire new faculty and replace anticipated retirees, to shape new direction and momentum in the scientific development of the department, and to build interaction with the Department of Biological Sciences which recently increased significantly in size and scope. The University is prepared to make a substantial commitment for support of new positions, equipment, and space renovation. Research area open, interest in organic and/or biophysical areas especially suitable. Applicants should send curriculum vitae and names of five references to: **Professor A. A. Bothner-By, Chairman, Search Committee, Carnegie-Mellon University, Pittsburgh, Pa. 15213.** *Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

DIRECTOR CLINICAL MICROBIOLOGY LABORATORIES TEMPLE UNIVERSITY HOSPITAL

Applicants are invited to apply who have a Ph.D., M.D., or equivalent and are eligible for certification by The American Board of Medical Microbiology. The individual will be responsible for directing the operations of the Clinical Microbiology Laboratories of Temple University Hospital and in this capacity will report to the director of the Clinical Laboratory Service of the hospital. The position carries a faculty appointment in the Department of Microbiology and Immunology, Temple University School of Medicine, permitting participation in the academic programs of the department, which includes a postdoctoral training program in Medical Laboratory and Public Health Microbiology. Candidates should send curriculum vitae and three reference letters to: **Dr. Stanley H. Lorber, Temple University School of Medicine, 3401 North Broad Street, Philadelphia, Pa. 19140,** by 15 November 1983. *Temple University is an Equal Opportunity/Affirmative Action Employer.*

TWO FACULTY APPOINTMENTS IN CELLULAR AND MOLECULAR BIOLOGY. The University of Oregon intends to make two faculty appointments, to begin in fall 1984, as the initial stage in a major expansion of the multidisciplinary program in cell and molecular biology. The main focus of the program is the molecular basis of cellular regulation, including, but not limited to, the areas of immunology, gene expression, cellular recognition and organelle biosynthesis. We expect to appoint new faculty primarily at the assistant professor level, although more senior candidates will also be considered. The appointments will be made in the chemistry or biology departments, jointly with the Cell Biology Program. Applications should be sent to: **Cell Biology Search, Institute of Molecular Biology, University of Oregon, Eugene, Oregon 97403.** They should include curriculum vitae, three letters of reference, a summary of research accomplishments and teaching experience, and a statement clearly describing research goals. The closing date is 15 November 1983. *The University of Oregon is an Equal Opportunity/Affirmative Action Employer.*

LABORATORY SCIENTIST

Large Cancer Research Center is currently recruiting for an experienced laboratory scientist. Candidates must possess a bachelor's degree in biology or chemistry which must have included a course in biochemistry. Three years of experience in tissue culture, molecular biochemical, genetic engineering and recombinant DNA cloning techniques is required. Minimum annual salary: \$16,995. Send résumé to: **Maryland Employment Security Administration, Job Order Number 4067592, 1100 North Eutaw Street, Baltimore, Maryland 21201, attention: G. Purnell.**

The **DEPARTMENT OF NEUROBIOLOGY** at Stanford University School of Medicine invites applications from qualified individuals for a faculty position available in 1984. The level of the appointment is flexible (assistant, associate, or full professor). The successful candidate will have teaching experience in neurobiology and will be expected to maintain an independent research program of high quality. Preference will be given to those individuals who have significant research accomplishments and interests in cellular neurophysiology and/or membrane biophysics. Applications, including the names of three references, should be addressed to: **Chairman, Search Committee, Department of Neurobiology, Stanford University School of Medicine, Stanford, California 94305.** *Stanford University is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.*

NEUROCHEMIST/BIOCHEMIST—Two positions.

Postdoctoral fellow/Ph.D.—Opportunity for basic research on neuropeptide receptors and neuropeptidases. Relevant experience required.

M.S./B.S.—Opportunity for basic research on biochemistry of receptor mechanisms, in vitro and in vivo studies. Strong laboratory skills and relevant experience required. Submit curriculum vitae to: **V. G. Jordan, Senior Staffing Specialist, CIBA-Geigy Corporation, Summit, N.J. 07901.**

POSITIONS OPEN

RENSSELAER POLYTECHNIC INSTITUTE (RPI). Full-time **Department of Chemistry** positions in the Center for Integrated Electronics. The Center, with industrial and corporate support of \$12 million since 1981, has an IBM EL-2 direct write electron beam lithography system, ion implantation systems, advanced computer-aided design and testing equipment, and specialized laboratories in polymer chemistry, surface analysis, digital and analog design, microprocessor testing, and electro-optics research. Candidates expected to pursue research related to microelectronics such as solid-state chemistry, surface science, plasma, or polymer chemistry. Undergraduate and graduate teaching in the Department of Chemistry. Academic rank, tenure, and salary open. *RPI is an Equal Opportunity/Affirmative Action Employer.* Send résumé and three letters of recommendation to: **Professor Stephen E. Wiberley, Chairman, Department of Chemistry, or Professor Andrew J. Steckl, Director, Center for Integrated Electronics, Rensselaer Polytechnic Institute, Troy, N.Y. 12181.**

FACULTY OPENINGS University of North Carolina Institute of Marine Sciences Morehead City, N.C.

Tenure-track vacancy as assistant or associate professor for:

Coastal process sedimentologist with interests in sediment dynamics or geochemistry, or

Experimental marine ecologist with interests in micrograzers, zooplankton, or larvae, available September 1984.

and

Research assistant professor of marine science: 2-year term appointment renewable once, available spring 1984.

To apply for either position, send résumé, letter describing research interests, and three references to:

**Dr. Dirk Frankenberg, Director
Institute of Marine Sciences
3407 Arendell Street
Morehead City, N.C. 28557**

Closing date: 1 January 1984. *The University of North Carolina at Chapel Hill is an Equal Opportunity/Affirmative Action Employer.*

MANAGER FOR CHEMICAL INSTRUMENTATION. Applications solicited for a manager to supervise and participate in operation, maintenance, and advancement of departmental instrumentation, and training of postdoctoral and graduate students in its use. Candidates must have previous experience in maintenance and operation of several of the following: magnetic resonance, mass spectrometry, Fourier transform infrared, computers and digital electronics, laser Raman spectroscopy. An advanced degree in chemistry, physics, or electrical engineering is preferred, but candidates with equivalent experience will be considered. Send résumé, transcripts, and three recommendations to: **Dr. Gleb Mamantov, Department of Chemistry, University of Tennessee, Knoxville, Tenn. 37996-1600.** *An Equal Opportunity/Title IX/Section 504 Employer.*

MS INSTRUMENT SPECIALIST. University of Rochester, Department of Chemistry, Staff position for high-level maintenance and supervision of computer interfaced nominal and high resolution mass spectrometry instruments. Experience in vacuum techniques and electronics required. Send résumé to: **Personnel Department, University of Rochester, P.O. Box 636, Rochester, New York 14627.** *The University is an Equal Opportunity Employer; we welcome applications from qualified women and minority candidates.*

THE DEPARTMENT OF PATHOLOGY, UNIVERSITY OF CALIFORNIA, SAN DIEGO, has two openings for tenure-track positions at the assistant or associate professor level. One position is in **neuroimmunology** and applications are invited from candidates with research interest in autoimmune or virus induced demyelinating diseases. The second position is in **molecular neurobiology**, areas of interest to include neural growth and differentiation, cell culture of brain tissue and brain tumors. Applicants should have the M.D. or Ph.D. degree and a demonstrated record of research potential and support. Candidates are expected to participate in department teaching programs. Salary and rank depend on qualifications. Send curriculum vitae by 28 October to: **Peter Lampert, M.D., or Gernot Walter, Ph.D., Department of Pathology (M-012), University of California, San Diego, La Jolla, Calif. 92093.** *Affirmative Action/Equal Opportunity Employer.*

SENIOR IMMUNOLOGIST

Bethesda Research Laboratories is seeking an outstanding Ph.D. or M.D. immunologist capable of leading a team of scientists in basic and applied research to develop new diagnostic tests and immunology products.

The successful candidate will have extensive experience in immunobiology and immunochemistry including the production of monoclonal antibodies, demonstrated ability to direct the effort of others, and a strong record of accomplishment and publications of merit in clinical immunology.

For immediate consideration, please forward resume to:

BRL
Wayne E. Fowler
Personnel Director
Bethesda Research Laboratories
Box 6009, 8717 Grovemont Circle
Gaithersburg, Md. 20877

An equal opportunity employer, M/F/H

TOXICOLOGIST

Fortune 100 company located in Chicago has an exceptional opportunity for a scientist capable of coordinating our corporate toxicology program through all phases of planning, operations and reporting. This includes such responsibilities as budget and protocol development, study monitoring and compliance review, as well as overall project reporting.

The successful candidate will have a Ph.D. in toxicology, pharmacology, physiology or related discipline, and industrial or contract laboratory experience is highly desirable. Strong organizational and communication skills are required.

As a recognized industry leader, we provide excellent salaries, comprehensive benefits and outstanding opportunities for career advancement. For prompt consideration, send your resume with salary history and requirements, in confidence, to:

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An Equal Opportunity Employer M/F

SENIOR SCIENTIST

\$3,050/per month

A leading disk drive and magnetic recording head developer and manufacturer located in the mid-west has a Senior Scientist position available. Duties include prepare and analyze thin magnetic films for use in thin film disks. Study the nucleation and growth of those films using the TEM and SEM. Analyze film and growth process using x-ray fluorescence. Measure magnetic and electrical properties. Determine surface condition prior to thin film disposition. Prepare thin magnetic films by sputtering. Requirements: PHD degree in physics plus a minimum of three years direct experience which must include thin film and surface characterization techniques using high resolution interferometer and electron microscope, electrical transport measurement for film characterization and sputtering. Send resume to:

**Ms. Nancy Thompson
M.D.E.S. Control #3-71
309 Second Avenue South
Minneapolis, MN 55401**

Research Proposals Invited for Projects Relevant to AUTISTIC CHILDREN

The Stallone Fund for Autism Research is interested in receiving proposals for research on the cause and treatment of children and adults having infantile autism and related severe behavioral disorders which start before age 3.

Proposals are solicited in such areas as the biochemistry of autism, genetics, electrophysiology, and vitamin, mineral, and amino acid metabolism.

Initial proposals must be limited to two typewritten double-spaced pages. In some cases, more detailed proposals may be requested by the Scientific Advisory Board. Support will range from \$5,000 to \$50,000 for the first year. Indicate level of support required. Closing dates for proposals for 1983-1984 are 1 December 1983, 1 March, 1 June, and 1 September 1984. Submit four copies each of the following:

- 1) Two-page initial proposal,
- 2) Curriculum vitae of investigators,
- 3) Reprints, preprints, and so forth, supportive of proposal.

**Scientific Advisory Board
The Stallone Fund for Autism Research
4157 Adams Avenue
San Diego, Calif. 92116**

DIRECTOR, INTRAMURAL RESEARCH PROGRAM

The National Institute on Alcohol Abuse and Alcoholism (NIAAA), Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA), Bethesda, Maryland, is seeking to fill this key Federal position. The NIAAA is responsible for the conduct and support of research and training relating to the causes, prevention, diagnosis, and treatment of alcoholism and other alcohol-related disorders. The Director, Division of Intramural Clinical and Biological Research exercises primary responsibility for planning, organizing, evaluating and directing all aspects of the intramural programs for the Institute, including a clinical research ward in the National Institutes of Health Clinical Center and basic laboratories on and off campus. The Division has a FY 83 budget of \$7.4 million with a staff of 83. For medical officers, minimum requirements include a degree of Doctor of Medicine or Doctor of Osteopathy. For other candidates, a Ph.D. degree in an academic field related to the health sciences pertinent to the work of the position is desirable, but a bachelor's degree is acceptable with additional qualifying experience. All candidates must also demonstrate progressively responsible experience in scientific research administration and have proven professional competence in the areas related to the intramural research function. Salary to \$67,200 (selectee may be eligible for up to \$10,000 per annum-Physicians Comparability Allowance). For additional information regarding the position and/or qualification requirements, including requesting an application form SF-171, contact: Ms. Margaret Skinker. Applications must be sent to: Division of Personnel Management, NIAAA Bldg. 10/ACRF Rm. 3C103, 9000 Rockville Pike, Bethesda, Maryland 20205, (301) 496-6748 by September 30, 1983. Late applications will be accepted until one day before the qualifications review board meets.

AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

MARINE ORGANIC CHEMIST—Research associate in the Cooperative Institute of Marine and Atmospheric Sciences. University of Miami and National Oceanic and Atmospheric Administration (NOAA). Experience in GC-MS-DS and sampling from ships or aircraft desired. **Chairman, Search Committee, D. K. Atwood, NOAA/AOML, 4301 Rickenbacker Causeway, Miami, Florida 33149.**

PHARMACOLOGIST (Marshall University School of Medicine). Tenure-track faculty position involving medical/graduate student teaching. Salary commensurate with qualifications and experience. Minimum qualifications: Ph.D. or M.D. and postdoctoral experience. Training and experience in drug metabolism, cardiovascular, or CNS pharmacology preferred. Application deadline: 1 November 1983. Apply to: **Donald S. Robinson, M.D., Chairman, Department of Pharmacology, Marshall University School of Medicine, Huntington, W. Va. 25701. An Equal Opportunity Employer.**

PLANT RESEARCH ASSOCIATE—Industrial research on algal protoplasts, genetics, physiology. Required experience in several areas: plant protoplast induction, regeneration, hybridization; plant biochemistry, physiology, genetics; fluorescence, phase, transmission electron microscopy. Start 1 November if possible. M.S. plus experience or Ph.D. Salary depends on qualifications. Send résumé and three references to: **Dr. Martha D. Berliner, Biology Department, Virginia Commonwealth University, Richmond, Va. 23284. Telephone: 804-257-1562. Equal Opportunity/Affirmative Action Employer.**

The University of Wisconsin-Madison, Department of Botany, is seeking a **PLANT TAXONOMIST** to start work in August 1984. The appointment will probably be at assistant professor rank, but could be higher. Applicants should be **ANGIOSPERM SYSTEMATISTS** who use tools of modern biology. We are especially interested in candidates who are applying modern molecular techniques to problems of angiosperm taxonomy. Examples include: (i) the study of evolutionary relationships based on protein or nucleic acid sequences and (ii) the application of chemotaxonomy to enzyme systems and their products. The appointee will be expected to develop a vigorous research program, and to have a strong interest in advising graduate students in the laboratory and in the field. Teaching duties will include an advanced course in the area of specialty and probably involvement in an introductory biology course.

The University of Wisconsin is an Equal Opportunity Employer. Applicants should send curriculum vitae and detailed statement of research objectives by 1 January 1984 to: **Michael S. Adams, Chairman, Search Committee, Department of Botany, University of Wisconsin, Madison, Wis. 53706.** Three letters of reference should be sent by the same date.

POSTDOCTORAL ASSISTANT: Ph.D. or equivalent degree in biochemistry, cell biology, molecular biology, or developmental biology. To study development of avian cornea and wound healing in ocular tissue. Experience in recombinant DNA techniques preferred but not necessary. Send résumé and two references to: **Winston Wy Kao, Ph.D., Director of Ophthalmic Research, Department of Ophthalmology, University of Cincinnati, College of Medicine, 231 Bethesda Avenue, Number 527, Cincinnati, Ohio 45267. Telephone: 513-872-5151.**

POSTDOCTORAL FELLOW. Two positions available for the study of E-C coupling in cardiac myocytes using biochemical and voltage clamp approaches. Research instructor position available for development of semiconductor-based biomedical instrumentation. Send curriculum vitae and the names of three references to: **Dr. J. L. Sutko or Dr. J. L. Kenyon, Room L5.134, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. Equal Opportunity Employer.**

POSTDOCTORAL POSITION in neurobiology now available for Ph.D. in biochemistry or related field to study cell migration and cell surface recognition events in the developing nervous system. Desirable expertise includes: neural cell culture, cellular proteases, protein purification, monoclonal antibody production, and immunology. Send curriculum vitae, summary of research interests and experience, and names of three references to: **Dr. Nicholas W. Seeds, Department of Biochemistry/Biophysics/Genetics, University of Colorado School of Medicine, 4200 East 9 Avenue, Denver, Colo. 80262. An Affirmative Action/Equal Opportunity Institution.**

POSITIONS OPEN

Department of Health, Republic of China, is inviting applications for **POSTDOCTORAL FELLOWS** to serve as group leaders in Food and Drug Bureau of the department in the areas of drug analytical chemistry, drug biology, pharmacognosy, food chemistry, food microbiology, and pharmaceutical administration. Send résumé and the names of three referees, with one currently in Taiwan, to: **Dr. Chi-Byi Horng, Food and Drug Bureau, 161 Kun-Yang Street, Nan-kang, Taipei, Taiwan.** For additional information, telephone: 301-955-3170.

POSTDOCTORAL POSITION available to study the molecular regulation of metabolic pathways and/or pleiotropic genetic control mechanisms in *Salmonella typhimurium*. Background in genetics and/or recombinant DNA technology preferred. Salary: \$16,900 per year. Send résumé and three letters of recommendation to: **Dr. John W. Foster, Department of Microbiology, Marshall University School of Medicine, Huntington, W. Va. 25704.**

POSTDOCTORAL POSITION open to study cell wall assembly of *Neurospora crassa*. Particular emphasis is placed on the biochemical and genetic characterizations of chitin synthetase and glucan synthase mutants. Applicants should have experience in enzymology and genetics; familiarity with fungi would be useful. Please send curriculum vitae and arrange to have three letters of recommendation sent to: **Dr. Claude Selitrennikoff, University of Colorado Health Sciences Center, 4200 East 9 Avenue, B-111, Denver, Colo. 80262. An Affirmative Action/Equal Opportunity Institution.**

POSTDOCTORAL POSITION available immediately for 1 to 2 years for qualified Ph.D. in biochemistry/molecular biology or related field. The individual will participate with a multidisciplinary team studying the heterogeneous responses of mammalian cells in culture to ionizing radiation. Studies include: cell survival, flow cytometric assays for cell cycle position and macromolecular content, DNA damage and repair as well as the analysis of chromatin structure with recombinant DNA techniques. This position is NCI funded, thus U.S. citizenship or a permanent visa are required. Send curriculum vitae and names of three references to:

**Dr. Lyle A. Dethlefsen, D.V.M., Ph.D.
Department of Radiology
University of Utah Medical Center
Salt Lake City, Utah 84132**

Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION available 1 October to study the cell biology and/or biochemistry of the endothelium and associated cells of the blood vessel wall with particular emphasis on the effects of growth factors and oxygen. The work is part of an ongoing research program focused on the role of these cells in blood vessel growth and in microangiopathy. Send curriculum vitae and the names and addresses of three references to: **Patricia A. D'Amore, Ph.D., Department of Surgical Research, Children's Hospital Medical Center, 300 Longwood Avenue, Boston, Mass. 02115.**

POSTDOCTORAL POSITION

A postdoctoral position in skeletal muscle physiology and biochemistry is available December 1983. The work centers on the biochemical energetics of muscle contraction and will involve measurement of the time course of chemical changes during contraction of whole muscle and isolated single muscle fibers using biophysical, biochemical, and transient kinetic techniques. Background in muscle physiology or biochemistry is desirable. Send curriculum vitae and the names of three references to:

**Earl Homsher, Ph.D.
Department of Physiology
School of Medicine
Center for Health Sciences
University of California, Los Angeles
Los Angeles, California 90024**

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

POSTDOCTORAL POSITION available immediately for research in the role of DNA methylation in virus gene expression. Applicants will have an opportunity to gain conceptual and technical experience in molecular biology including recombinant DNA, cloning, and nucleic acid sequencing. Send curriculum vitae and the names of three references to: **Dr. Allan Granoff, Division of Virology and Molecular Biology, St. Jude Children's Research Hospital, P.O. Box 318, Memphis, Tennessee 38101. An Equal Opportunity/Affirmative Action Employer**

POSITIONS OPEN

POSTDOCTORAL POSITION

To study the biochemistry of hormone action in liver and fat cells. Research focuses on regulation of receptor coupled adenylate cyclase. A Ph.D. in biochemistry or related field required. Experience in hormone action/membrane biochemistry desirable. Salary range: \$15,000 to \$18,000. Send curriculum vitae and letters of reference to: **Dr. Craig Malbon, Department of Pharmacology, Health Sciences Center, State University of New York (SUNY) Stony Brook, Stony Brook, N.Y. 11794. SUNY is an Equal Opportunity/Affirmative Action Employer. AK713.**

POSTDOCTORAL POSITION available immediately for studies on metabolic effects and regulation of alcohol and acetaldehyde metabolism, oxygen radical production by liver cells and microenzymes. Ph.D. in biochemistry or pharmacology preferred. Please send curriculum vitae and letter of recommendation to: **Dr. Arthur I. Cedarbaum, Department of Biochemistry, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately to investigate the role of calcium, and the chemical significance of γ -carboxyglutamic acid residues in vitamin K-dependent blood coagulation proteins. Experience in protein/peptide purification and sequencing desirable. Knowledge of NMR and EPR techniques useful. Competitive salary up to 3 years. Send curriculum vitae and names and telephone numbers of three references to: **S. Paul Bajaj, Ph.D., University of California Medical Center (H-811-K), 225 Dickinson Street, San Diego, Calif. 92103. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION

Postdoctoral position available now for multidisciplinary studies on behavioral and neurochemical correlates of psychoactive drug effects. Neuroscience background with experience in pharmacology and experimental behavioral analysis is highly desirable. Send curriculum vitae and three letters of reference to: **Dr. Richard H. Rech, Department of Pharmacology/Toxicology, Michigan State University, East Lansing, Mich. 48824. Michigan State University is an Affirmative Action/Equal Opportunity Institution.**

POSTDOCTORAL POSITION FOR LEUKOTRIENE RESEARCH

Applicants must have experience in extraction and quantitation of arachidonic acid metabolites by high-pressure liquid chromatography. Position available immediately, supported by 3-year research grant. Send curriculum vitae, reprints or manuscripts in press, and names of three references to: **Dr. Hans L. Spiegelberg, Department of Immunology, Research Institute of Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, Calif. 92037. Scripps Clinic is an Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately for recent Ph.D. with biochemistry/biophysics background to investigate receptor movement and membrane changes associated with macrophage stimulation. Experience in fluorescent techniques and membrane biochemistry preferred; 3-year position. Starting salary: \$16,000 to \$17,000 per year. Send curriculum vitae and names of three references to: **Dr. Anrij Holian, Department of Medicine, Hospital of the University of Pennsylvania, Philadelphia, Pa. 19104. Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE. Applications are invited for a research position for work on a combined experimental and theoretical study of structural phase transitions in crystals to be carried out in the Physics Laboratories of a midwestern university. Applicants must have a Ph.D. degree in experimental condensed matter physics with specific experience in laser-Raman spectroscopy of crystals. Also required are: (i) experience in crystal growth and the use of x-ray diffraction and fluorescence techniques for orientation and identification of crystals, (ii) formal training in structured computer programming, and (iii) experience in carrying out crystal lattice-dynamical calculations for interpretation of and correlation with experimental spectra. Salary: \$17,000 per year plus benefits. Send résumé and three letters of recommendation to: **Job Service of Nebraska, P.O. Box 95200, Lincoln, Nebraska 68509.**

PRESIDENT

State University of New York Upstate Medical Center Syracuse, New York

The State University of New York Upstate Medical Center solicits nominations and applications for the position of President. The President is the chief executive officer of an independent campus within the State University of New York.

The institution is a comprehensive academic medical center comprised of three colleges, a University Hospital and is affiliated with several health care facilities in the community. The total enrollment is about 950 including 600 students in the College of Medicine.

Upstate Medical Center is located in Syracuse, New York and employs approximately 3,000 to conduct its mission of health education, patient care and research.

The Presidential Search Committee will begin its deliberation on October 17, 1983. Nominations and applications should be sent to:

**Mrs. Margo Northrup, Chairperson
Presidential Search Committee
Upstate Medical Center
155 Elizabeth Blackwell Street
Syracuse, New York 13210**

An Affirmative Action Equal Opportunity Employer

Anti-Tumor Drug Discovery Research

Cell Biologist

Significant expansion at the Warner-Lambert/Parke-Davis Pharmaceutical Research Division has generated an immediate opening in the Chemotherapy Department at the Scientist/Senior Scientist level. The position is located in Ann Arbor, Michigan at our modern facilities, adjacent to the University of Michigan campus, which are exclusively devoted to the discovery and development of new drugs.

The successful candidate will be responsible for the development of methods for in vitro evaluation of novel anti-tumor agents. Applicants should hold a Ph.D. degree or equivalent in a biological science preferably with 3 years of postdoctoral experience in anti-tumor drug research.

Interested, qualified applicants should forward curriculum vitae together with references and salary requirements to: Ms. M. Wolin, Human Resources Representative, Dept. #143-83, WARNER-LAMBERT/PARKE-DAVIS, PHARMACEUTICAL RESEARCH DIVISION, 2800 Plymouth Road, Ann Arbor, Michigan 48105
An Equal Opportunity Employer M/F/H

**WARNER
LAMBERT**

ELECTRICAL ENGINEERS AND COMPUTER SCIENTISTS

The *LISTER HILL NATIONAL CENTER FOR BIOMEDICAL COMMUNICATIONS*, the research and development arm of the *NATIONAL LIBRARY OF MEDICINE*, is recruiting for Computer Scientists and Electrical Engineers. They will work in broad areas of computer applications and communications research. Our laboratories house R&D activities in signal processing, digital communications, image data compression, library automation, videodisc technology, distributed information systems, information retrieval techniques, expert systems and knowledge base systems. Vacancies exist in hardware, software and firmware design and development. We are seeking qualified people in the following categories:

COMMUNICATIONS DESIGN ENGINEERS experienced in one or more of the following areas: the hardware, software and firmware design, development, implementation and evaluation of high-speed digital communications systems and network protocols; image enhancement and data compression algorithms; high resolution document scanners and displays; high density magnetic and optical storage devices. R&D facilities include a communications development laboratory, a signal processing laboratory and a video and image processing laboratory.

COMPUTER SPECIALISTS experienced in mini-computer/microprocessor hardware/software design and programming experience in one or more languages or systems such as MUMPS, PASCAL and UNIX. R&D facilities include MUMPS-based Data General Eclipse

C/330, RDOS-based Data General Eclipse S/200 and UNIX-based PDP-11/60.

COMPUTER SCIENTISTS with research experience in artificial intelligence, database technology, language development, and distributed computer systems. Research facilities include a DEC-2060 with ARPANET connections, a database machine and an extensive array of software tools and languages including INTERLISP, C, PASCAL, SAIL.

Application may be made for both permanent and short-term appointments. Salaries range from \$24,508 to \$45,406, depending on grade equivalency (GS-11 through GS-13), type of appointment, and experience and educational background in any one or more of the above disciplines.

Please send a Standard Form 171 by November 30, 1983.

Ms. Yvonne Reid
National Library of Medicine
National Institutes of Health
Public Health Service
Building 38A, Room 7N714
8600 Rockville Pike
Bethesda, Maryland 20209
For further information call: (301) 496-4441

POSITIONS BEING FILLED CONTINUOUSLY

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WRITER

RADIO/SCIENCE WRITER

The American Association for the Advancement of Science (AAAS) is seeking a **radio/science writer** for its daily 90-second news feature, "Report on Science." The writer for this nationally syndicated commercial radio program is responsible for selecting script topics and researching, writing, and fact-checking scripts so that they are interesting, lively, and accurate. Topics include all the sciences and engineering. Applicants should have a background in both science and radio and at least 2 years of related experience.

Please send letter of application, résumé, salary requirements, and three writing samples to:

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Washington, D.C. 20005

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We have a challenging position for a Life Support Physiologist to support aviation oriented physiology activities, analysis of environmental/physical factors such as acceleration forces, acoustic levels, personal protective systems and physical anthropometry in order to provide aircrew and groundcrew data to design groups.

An overall background in physiology and how it can be applied to aviation physiology activities is implied. An MS or PhD in physiology or a directly related area is required. Skills in statistics and computer programming desirable.

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P.O. Box 516
Department 62-152
St. Louis, MO 63166

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POSITIONS OPEN

POSTDOCTORAL POSITIONS available immediately.

(i) For recent Ph.D. in biochemistry or pharmacology to study peptide receptors and post-receptor molecule signals. Must have solid background in protein chemistry and enzymology. Prefer experience in cell cultures, ligand-receptor interactions and immunological techniques. One-year appointment with second year option for Dr. Jose Musacchio, Department of Pharmacology.

(ii) Ph.D. in cell biology or related area to participate in research on nerve membrane studies. Background in freeze-etching or immunocytochemistry preferred.

(iii) Ph.D. in biochemistry with background in enzymology and molecular biology for active research laboratory.

Send résumés identifying number of position of interest, including three references, to: **Miriam Kerans, Recruitment Director, New York University Medical Center, 560 First Avenue, New York, N.Y. 10016.** An Affirmative Action/Equal Opportunity Employer, M/F.

POSTDOCTORAL POSITION available immediately for studies on developmental regulation of chromatin composition and structure in relation to changing gene expression during cartilage differentiation. Background in molecular genetics, protein chemistry, or hybridoma technology desirable. Send curriculum vitae, statement of research interests, and names of three references to: **Dr. Stuart A. Newman, Department of Anatomy, New York Medical College, Valhalla, N.Y. 10595.**

POSTDOCTORAL POSITIONS

Two positions are available immediately to join a group involved in a multi-faceted investigation of the biochemistry, genetics, regulation and evolutionary biology of a carboxylesterase in *Drosophila*. Experience in nucleic acid biochemistry and/or protein chemistry is desired. Salary will be commensurate with qualifications. Appointments will be for 1 year with possibilities for renewal for two additional years. Send a résumé, copies of publications, and a list of three or more references with telephone numbers to: **Dr. Rollin C. Richmond, c/o PDS, Department of Biology, Indiana University, Bloomington, Ind. 47405,** by 1 October 1983. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS available immediately to study structure, function, and biosynthesis of yeast glycoproteins and the molecular biology of deoxynucleotide metabolizing enzymes in eukaryotic and prokaryotic organisms. The processing and functional role of oligosaccharides in enzyme action, clarification of substrate binding sites, regulation of gene expression, and effect of mutagenesis on enzyme function are some of the projects to be undertaken in a well-equipped core facility. Cloning and sequencing experience desirable, but not essential. Initial stipend about \$17,000 for a 1-year appointment; renewable. Send résumé and three references to: **Dr. Frank Maley, Center for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, New York 12201.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE

Regulation of cellular proliferation. The Laboratory uses tools of somatic cell genetics, biochemistry, and molecular biology to study initiation of cellular proliferation in response to growth factors and tumor promoters. Experience in cell culture, protein purification and modification, gene transfer, and/or molecular cloning and gene expression would be valuable. Salary commensurate with experience. Send curriculum vitae and names and addresses of three references to: **Dr. Harvey Herschman, Department of Biological Chemistry, University of California, Los Angeles, School of Medicine, Los Angeles, Calif. 90024.**

PROJECT COORDINATOR to help direct a 12-month study on potential health hazards of waste disposal. Participate in building and supervising a project staff of eight and four scientific panels. Ph.D. or M.D. with 10 years of experience in toxicology, environmental science, industrial hygiene, or toxic waste management. Complete benefits package. Please send résumé in confidence to:

Personnel Officer
FASEB
9650 Rockville Pike
Bethesda, Maryland 20814
Equal Opportunity Employer

POSITIONS OPEN

POSTDOCTORAL RESEARCH APPOINTMENT "Alternatives to Destruction"

The Smithsonian Tropical Research Institute is seeking candidates for a research appointment in Panama. The field is applied tropical ecology. Candidates should be interested in conducting research in growing agricultural and horticultural crops within clearings inside tropical forest, as an alternative to clearing the forest completely. This is a challenging study of importance to the future of tropical mankind. We are seeking enthusiasts.

A Ph.D. degree or equivalent technical qualification in biological sciences or agronomy is desirable but candidates with bachelor's degrees and considerable relevant experience will be considered.

The study will be conducted on the Barro Colorado Nature Monument, Republic of Panama, and preference will be given to bilingual candidates.

Stipends will be in the range of \$18,000 per year. The award will initially be for 1 year, renewable annually for up to a maximum of 3 years. Initial inquiries with curriculum vitae should be sent to:

Deputy Director
Smithsonian Tropical Research Institute
APO Miami 34002
who will supply further information.

POSTDOCTORAL RESEARCH ASSOCIATE in biochemistry, available 1 October. Structure and catalytic mechanism of acetylcholinesterase, including development of novel active-site-directed affinity and photoaffinity labels and analysis of active site structure. Experience in protein chemistry/enzymology required. Send résumé and three letters of recommendation to: **Professor Saul G. Cohen, Department of Chemistry, Brandeis University, Waltham, Mass. 02254.** Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL/RESEARCH ASSOCIATE position available immediately to investigate self-control of peripheral vascular functions in humans. Candidate should have Ph.D. or M.D. and experience in cardiovascular psychophysiology. Please send curriculum vitae, three letters of recommendation, and any publications to: **Robert Freedman, Ph.D., Director, Behavioral Medicine Laboratory, Lafayette Clinic, Wayne State University, 951 East Lafayette Avenue, Detroit, Mich. 48207.**

POSTDOCTORAL RESEARCH FELLOW/ASSOCIATE position available for work in research program involving studies on hormonal (ADH, PTH) regulation of kidney functions; mechanism of renal transport and metabolism at cellular level. NIH support program open to United States citizen or permanent resident. Inquire by letter or collect call: **Dr. T. P. Dousa, Nephrology Research Unit, Mayo Foundation, Mayo Medical School, Rochester, Minnesota 55905.** An Equal Opportunity/Affirmative Action Institution.

RESEARCH ASSISTANT PROFESSOR

The Department of Surgery at the University of North Carolina School of Medicine invites applications for this position to be filled effective 1 January 1984. Preference will be given to candidates with degrees in anatomy or pathology and a minimum of 2 years of postdoctoral experience in steroid autoradiography. Candidates should have an interest in identifying hormone receptors on human target cells and tissues primarily related to breast, prostate, and thyroid cancer. The successful candidate is expected to develop a productive research program with external funding. Send curriculum vitae, an outline of research interests, and the names of three references to:

Dr. James F. Newsome
Department of Surgery
University of North Carolina
School of Medicine
Chapel Hill, North Carolina 27514

The University of North Carolina is an Affirmative Action/Equal Opportunity Employer. Women and minority candidates are encouraged to identify themselves voluntarily.

A **RESEARCH ASSOCIATE** position is available immediately in the area of drug metabolism, pharmacokinetics, and toxicology. A Ph.D. in pharmacology or related areas is required. Salary range: \$15,000 to \$18,000 depending on education and experience. Send curriculum vitae and three letters of reference to: **Dr. Satu M. Somani, Professor of Pharmacology and Toxicology, Southern Illinois University, School of Medicine, P.O. Box 3926, Springfield, Illinois 62708.** An Equal Opportunity/Affirmative Action Employer.

**Director, Division of Biopharmaceutics
National Center for Drugs and Biologics
FOOD AND DRUG ADMINISTRATION**

**Salary \$56,945-\$63,800
(Senior Executive Service)**

The Food and Drug Administration has a position available for Director, Division of Biopharmaceutics. The Director is responsible for carrying out a comprehensive Agency intramural and extramural research program for purposes of identifying biopharmaceutic problems, developing new and improved methodology for determining whether drug products have acceptable bioavailability or bioequivalence, and for establishing feasible meaningful product regulatory standards.

This is an exciting and challenging opportunity for an individual who has experience in the field of pharmaceutical research, including responsibility for conducting and administering a biopharmaceutics research program either in an academic or industrial setting. Candidates will be evaluated on ability to plan, implement and evaluate programs; represent the organization and deal effectively with key individuals in the Federal and state governments, the academic community, professional and scientific organizations, consumer groups, and industry; implement equal employment and career opportunity programs; and skills and experience in the medical and scientific community. It is desirable that candidates possess significant contributions to the scientific state of the art in the form of papers and presentations; experience in conducting biopharmaceutic research in support of submissions for drug applications; general knowledge of FDA regulations governing submissions of drug applications; and international recognition as a biopharmaceutics scientist.

A curriculum vitae should be sent to: Jeylene Wood, DIVISION OF PERSONNEL MANAGEMENT (HFA-440), Food and Drug Administration, Parklawn Building, 5600 Fishers Lane, Rockville, Maryland 20857. For further information, please call Ms. Wood collect on (301) 443-3634. Applications should be received by September 30, 1983.

This position may also be filled by current Commissioned Officers of the U.S. Public Health Service or by former Commissioned Officers willing to rejoin the Corps.

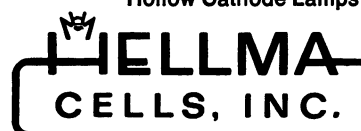
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**DIRECTOR, DIVISION OF KIDNEY, UROLOGIC,
AND HEMATOLOGIC DISEASES**
and Associate Director for Kidney, Urologic, and Hematologic Diseases (dual positions)

The National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases invites nominations and applications for the position of Director, Division of Kidney, Urologic, and Hematologic Diseases (KUHD). The candidate must be internationally recognized within the scientific community as an authority in kidney diseases. In addition, the candidate should demonstrate an interest and a commitment to urologic and hematologic diseases. This Institute conducts, fosters, and supports research and research training in the prevention, management, and cure of arthritis, and related bone and skin diseases, diabetes and related endocrine and metabolic diseases; kidney, urologic and hematologic diseases, and digestive diseases. Programs encompass intramural laboratory research and extramural (grants and contracts) activities in fundamental arthritis, diabetes, digestive and kidney disorders.

The Director, serves as the primary official with responsibility for planning and executing the Institute's extramural programs in kidney, urologic, and hematologic diseases, including: basic and applied research, training fellowships and institutional training awards, multipurpose centers of research, clinical trials, technological development and application of research findings; and collection and dissemination of reliable data and information, budget development, and advising and participating with outside voluntary health organizations and the National Advisory

Council in identifying and assessing the needs and requirements for research and manpower development in categorical diseases. Additionally, the incumbent serves as principal advisor to the Institute Director on matters and policies pertaining to these areas. Also, the incumbent will conduct intramural research projects in the areas of kidney and related diseases.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$56,945 to \$63,800 per annum, depending on qualifications. Currently the payable salary is limited to \$63,800. Physicians may be eligible for an additional comparability allowance up to \$10,000 per year. (Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service). Mandatory professional/technical qualifications are a medical degree, or Ph.D. degree in a health or health related science (or equivalent) and research program administration and/or clinical experience in kidney diseases. Further information on these qualifications are available by contacting Syd Carter, Personnel Management Specialist, National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases, Building 31, Room 9A34, Bethesda, Maryland 20205, (301) 496-4231.

Mandatory managerial/executive qualifications include evidence of management of a basic or clinical research program, demonstrating ability to assume leadership

responsibilities in developing program goals; representing the program to outside groups; directing program planning, execution, and evaluation; and conducting a fair and equitable employment program, including the attainment of EEO objectives.

Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the degree to which they exceed the mandatory managerial/executive qualifications, and on the following desirable qualifications: scientific reputation/peer recognition, training and education, leadership of a basic or clinical research or research administration program, and honors and awards.

APPLICATIONS (PERSONAL QUALIFICATIONS STATEMENT SF-171) should be sent to Mr. Clifford Moss, Executive Secretary, Search Committee for Director, KUHD, Building 31, Room 9A34, National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases, Bethesda, Maryland 20205, telephone (301) 496-4231. All applications must be postmarked before September 30, 1983.

A current curriculum vitae and bibliography must accompany all applications. Applications from women and/or minority group members are especially solicited. Department of Health and Human Services Public Health Service National Institutes of Health National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases

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POSITIONS OPEN

POSTDOCTORAL TEACHING—RESEARCH POSITION. Position requires Ph.D. in nuclear pharmacy/radiopharmaceutical science. Scientist must be qualified to present lecture and laboratory material in nuclear pharmacy to undergraduate pharmacy students. Research opportunities are available in the development of radiopharmaceuticals. Deadline for receipt of applications is 15 November 1983. Send résumé and three letters of recommendation to: **Dr. Stanley Shaw, School of Pharmacy, Purdue University, West Lafayette, Ind. 47907.** *An Equal Opportunity/Affirmative Action Employer.*

DISTINGUISHED PROFESSOR IN BIOLOGICAL SCIENCE

The University of Wisconsin—Milwaukee is seeking nominations for a newly established **Distinguished Professorship in Biological Sciences.** Recognizing that a deeper fundamental understanding of aquatic ecosystems is likely to come from research at the interface between ecological and cellular or sub-cellular processes this will be a joint position between the Departments of Biological Sciences and the Center for Great Lakes Studies.

Preference will be given to candidates who have an outstanding record of research indicating a strong commitment to aquatic science—freshwater or marine—and who are applying innovative cellular or molecular techniques to the study of the fundamental functioning of ecosystems.

The appointee is expected to maintain an active research program, and to participate in graduate student instruction as part of an interdisciplinary program of pre- and post-doctoral training in aquatic science.

Qualified persons interested in this position are invited to submit detailed curriculum vitae to:

**Dr. David N. Edgington, Director
Center for Great Lakes Studies
600 East Greenfield Avenue
Milwaukee, Wis. 53204**

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RESEARCH ASSOCIATE to study effect of infections caused by chicken and turkey coccidia. Compare anticoccidial drugs and development of resistance to new drugs. Study pathology of different coccidial infections in chickens and turkeys by means of brightfield and electron microscopy. Requires M.S. in poultry pathology and parasitology. Ability to differentiate all chicken and turkey *Eimeria*. Salary: \$14,400 per year; 40 hours per week. Applicants send résumés to: **Doris F. Kindell, Alabama State Employment Service, P.O. Box 2236, Opelika, Ala. 36803-2236,** or apply in person at any Alabama State Employment Service. Job Order 0545921. *Equal Opportunity Employer.*

RESEARCH ASSOCIATE

To direct and execute research on intestinal dwelling helminths with emphasis on maternally transferred immunity to infection and resistance mechanisms that are expressed at mucosal surfaces. The individual should have a strong background in immunology and parasitology, supervisory experience, and skills in monoclonal technology, protein characterization, the use of laboratory rodents in research. Résumé to: **Dr. Douglas D. McGregor, Director, J. A. Baker Institute for Animal Health, New York State College of Veterinary Medicine, Cornell University, Ithaca, N.Y. 14853.** *Cornell University is an Equal Opportunity/Affirmative Action Employer.*

TOXICOLOGIST. A tenure-track assistant professor position is available in the Washington State University College of Pharmacy, 1 January 1984. Ph.D. degree in relevant discipline is required. Postdoctoral experience is desirable. Duties include providing instruction in toxicology in Pharmacology/Toxicology Graduate Program and participating in instruction of professional pharmacy students. A successful candidate is expected to establish a vigorous, independent program of research in molecular toxicology. Send letters of application, curriculum vitae, three references, and a summary of research interests by 1 November 1983 to:

**Larry M. Simonsmeier, J.D., Dean
College of Pharmacy
Washington State University
Pullman, Wash. 99164-6510**

POSITIONS OPEN

PROFESSOR AND DIRECTOR OF TOXICOLOGY PROGRAM to provide scientific and administrative leadership of an established multidisciplinary graduate program in toxicology, comprised of 14 faculty, and 70 students (M.P.H., M.S., Ph.D., and postdoctoral). Applicants must have a doctoral degree in toxicology or a related field, for example, Ph.D., M.D., D.V.M., and have a demonstrated strong commitment to excellence in teaching and research in a field related to mechanistic toxicology. Publications should reflect creative and meritorious research. Evidence should be provided to indicate successful management of teaching and research programs. Send curriculum vitae, complete bibliography, and names and addresses of three references to: **Morton S. Hilbert, Chair, Toxicology Search Committee, School of Public Health, The University of Michigan, Ann Arbor, Michigan 48109.**

The University of Michigan is a nondiscriminatory, Affirmative Action Employer. Applications are especially sought from minority and women candidates.

RESEARCH ASSOCIATE. A position is available for an advanced postdoctoral fellow to work on cytoskeletal proteins during vertebrate development, in the Division of Biology at the California Institute of Technology. The applicant should have experience in immunology, neurobiology, tissue culture techniques, and current techniques in biochemical analysis of proteins. Additionally, the applicant should have extensive prior experience in the biochemical characterization of cytoskeletal proteins. Applicants must have a Ph.D. and, if possible, several years of postdoctoral experience. Duties will include supervision of technicians and less experienced research personnel, but primarily will be to carry out research. Applicants should send curriculum vitae and names of three references to: **Dr. Elias Lazarides, Division of Biology 156-29, California Institute of Technology, Pasadena, Calif. 91125.** *The California Institute of Technology is an Affirmative Action/Equal Opportunity Institution.*

RESEARCH POSITION—YEAST GENETICS

CORN PRODUCTS, a Unit of CPC North America, is seeking applications for a research position in a mature recombinant DNA program. Applicants must have a Ph.D. with research experience in yeast genetics and molecular biology. Postdoctoral experience is preferred and industrial experience is very desirable.

CORN PRODUCTS is an innovative food company with research facilities in suburban Chicago. This position offers good career potential to an individual interested in a strongly committed biotechnology program.

Applicants should send résumé with salary history, in complete confidence, to:

Manager, Personnel Services

**CORN PRODUCTS, a Unit of CPC North America
P.O. Box 345**

Summit-Argo, Ill. 60501

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RESEARCH SCHOLAR

The Division of Medical Oncology, Department of Medicine, Faculty of Medicine, University of Alberta, and the Cross Cancer Institute invite applications for a position as research scholar at the assistant/associate professor level. The position, funded through an external agency, will have a salary range of \$29,720 to \$53,658 per annum and the incumbent will enjoy the privileges of appropriate University academic rank. A Ph.D. or M.D. is required with preference given to candidates with experience related to human oncology. The appointee will have demonstrated the capacity to carry out independent research, and will be expected to establish an independent program and to interact with other investigators in basic and clinical research.

The University of Alberta and the Alberta Cancer Board are Equal Opportunity Employers but, in accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

Curriculum vitae, names of three referees, and an outline of research interests should be sent by 1 November 1983 to:

**Dr. T. A. McPherson
Director, Department of Medicine
Cross Cancer Institute
11560 University Avenue
Edmonton, Alberta, Canada T6G 1Z2**

POSITIONS OPEN

RESEARCH ASSOCIATE OR POSTDOCTORAL FELLOW

Position available immediately for Ph.D. to participate in ongoing studies on the biosynthesis and processing of CCK (cholecystokinin) in the brain. The ideal candidate will have expertise in biochemistry, in particular enzymology, protein chemistry, and protein synthesis. Other experience may be acceptable. Salary competitive.

Send curriculum vitae and names of three references to: **Margery C. Beinfeld, Department of Pharmacology, St. Louis University Medical School, 1402 South Grand Boulevard, St. Louis, Mo. 63104.** *An Equal Opportunity/Affirmative Action Employer, M/F/H.*

RESEARCH ASSOCIATE

An opening for a **postdoctoral research associate** is immediately available in the laboratory of Dr. Robert J. O'Connell to study olfactory physiology in the mouse and hamster. The research involves a multidisciplinary approach to the anatomical, behavioral, chemical, electrophysiological, and hormonal substrates of olfactory communication. Experience in one or more of these areas is a requisite. Send résumé, statement of research interests, and names of three references to: **Dr. Robert O'Connell, c/o PERSONNEL OFFICE, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Mass. 01545.**

An Equal Opportunity/Affirmative Action Employer

RESEARCH ASSOCIATE, M.D. or equivalent, to work on the organization of membrane proteins and properties of Ca^{++} -enriched human red cells, including projects on sickle cells and on the interaction of malaria parasite with host cell. A strong background in membrane protein immunology, scanning electron microscopy and experience in the field of erythrocyte biochemistry are required. Salary range: \$15,000 to \$18,000 per annum. Send curriculum vitae and three references to: **Professor L. Lorand, Department of Biochemistry, Molecular and Cell Biology, Northwestern University, Evanston, Ill. 60201.** *Northwestern University is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH BIOCHEMIST. The Northern Regional Research Center of the U.S. Department of Agriculture (USDA), has a career position available for a Ph.D. or equivalent scientist interested in fundamental research into properties of plant cell wall components of major food crops. The successful applicant must have a demonstrated ability to carry out basic research and is expected to develop a vigorous research program. Recent graduate and/or postdoctoral training and a broad knowledge of plant science and enzymology are considered desirable. This Center employs about 150 scientists in diverse programs of basic and applied research and provides the opportunity for a stimulating professional environment. *The USDA is an Affirmative Action/Equal Opportunity Employer.* Salary is based on qualifications and experience, GS-11/12, \$24,508 to \$29,274. U.S. citizenship is required. Send curriculum vitae to: **Dr. F. R. Dintzis, USDA-ARS, Northern Regional Research Center, 1815 North University Street, Peoria, Ill. 61604.**

SENIOR FACULTY POSITION IN PHARMACOLOGY AND TOXICOLOGY

The Department of Pharmacology and Toxicology in the College of Pharmacy, University of Arizona, invites nominations and applications for a tenure-track position at the professorial level. We are seeking an individual with an established and productive research program, who can expand the research capabilities of the department. Areas of research interest include immunopharmacology, developmental toxicology, oncogenesis, and neurotoxicology. The individual would be expected to participate in undergraduate, graduate, and postdoctoral education; develop a strong, well-funded research program; and assist in the development of an Institute for Toxicology at the University of Arizona. New laboratory facilities are available in the College of Pharmacy on the Health Sciences Campus. Applications should include detailed curriculum vitae, a statement of future research plans and career goals, and the names and addresses of three references. Please submit these to: **Dr. I. Glenn Sipes, Professor and Head, Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, Arizona 85721,** before 15 December 1983. *An Equal Opportunity/Affirmative Action Employer.*

Postdoctoral Fellow Wanted

Position available January 1984 for a postdoctoral fellow to perform structural studies of human histocompatibility loci and their products.

Applicants with Ph.D or equivalent and experience in histocompatibility, immunoregulation or molecular biology preferred.

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R & D Opportunities

SOFTWARE ENGINEER/CLINICAL CHEMIST — COMPUTER PROGRAMMER

The Ames Division of Miles Laboratories, Inc., a leading company in diagnostic products research and development, is seeking two individuals to join our Clinical Systems Research Group.

R&D ENGINEER — SOFTWARE DEVELOPMENT

This opportunity with growth potential involves responsibility for design and implementation of application software systems for such functions as data base management, information display, scientific analysis and communications. A strong background in laboratory applications of microcomputers (Z80, 8080, 8088, 6800 CPU's) with expert programming skills in high level languages (Pascal, C, Forth) is required.

Experience with real time command and control software programming is also needed. Qualified candidates will have a B.S./M.S. degree in computer science or engineering. Knowledge of clinical instrumentation would be a plus. Preference will be given to persons with 2-5 years R&D experience.

R&D CLINICAL CHEMIST/COMPUTER PROGRAMMER

This opportunity with growth potential involves responsibility for development of application software for data reduction, data base Management and diagnostic reporting. The individual will join a computer applications team as part of our Clinical Systems Research group involved in product development of new diagnostic systems. Expert programming skills in high level languages (Basic, Pascal, C, Forth) are required. A knowledge of real time command and control programming would be a plus. Qualified candidates will have an M.S./Ph.D. degree in clinical chemistry or related biomedical discipline. Preference will be given to persons with 2-5 years clinical laboratory experience.

Our location provides access to leading cultural and multi-university facilities along with the unique recreational opportunities provided by lower Michigan and the Great Lakes. Miles offers an excellent starting salary, superior benefits program and company paid relocation. To receive consideration, send your resume to:

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POSITIONS OPEN

RESEARCH ASSOCIATE POSITION. Two years. Recent Ph.D. in chemistry, biochemistry, or animal physiology to study metabolism of sulfonamides in animals. Expertise involves isolation and characterization of metabolites. Expertise in use of HPLC, NMR, IR, and GC-MS will be useful. Proposed salary: \$18,000 to \$19,000 per year. Send curriculum vitae and references to: **Dr. H. J. Klosterman, Department of Biochemistry, North Dakota State University, Fargo, N.D. 58105.**

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REQUEST FOR PROPOSALS

CANCER RESEARCH INSTITUTE

seeks applications for
GRANTS AND FELLOWSHIPS
in the field of
CANCER IMMUNOLOGY

The next deadline for receipt of applications is 1 February 1984. For information, contact:

Grant and Fellowship Coordinator
Cancer Research Institute, Inc.
133 East 58 Street
New York, N.Y. 10022
Telephone: 212-688-7515

Lloyd J. Old, M.D., Medical Director

MEETING

MEETING ANNOUNCEMENT AND CALL FOR POSTERS

A Technical Conference on Acid Deposition and Aquatic Resources in the Upper Midwest to be held in LaCrosse, Wisconsin, on 25 to 27 October is being organized by the North Carolina State University (NCSU) Acid Deposition Program. The conference will include invited presentations and a poster session. Prior registration is required due to limited space. A \$50 registration fee is required (\$10 for students with proof of status). For more information, contact: **NCSU Acid Deposition Program, 1509 Varsity Drive, Raleigh, N.C. 27606, attention: William R. Alsop; telephone: 919-737-3520.**

PROGRAMS

CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain a doctor of optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **The Dean of Admissions, The New England College of Optometry, Room 901, 424 Beacon Street, Boston, Mass. 02115.**

CLINICIAN—SCIENTIST PROGRAM

The Department of Nutrition and Food Science, Massachusetts Institute of Technology (MIT), and the Department of Medicine, New England Deaconess Hospital, invite applications for graduate study leading to S.M. or Ph.D. degrees from MIT. Opportunities exist for clinical and basic thesis research in fields of cardiovascular disease, intermediary metabolism, neural and endocrine regulation, nutrition and toxicology. Funds may be available for qualified candidates.

For further information, write to: **Dr. Robert S. Lees, Director of Medical Research, New England Deaconess Hospital, and Professor of Cardiovascular Disease, Massachusetts Institute of Technology, 110 Francis Street, Boston, Mass. 02115.**

BIOCHEMICAL PHARMACOLOGY OF ANTICANCER DRUGS

POSTDOCTORAL TRAINING PROGRAM emphasizes a biochemical and biophysical approach to the study of drug-cell interactions, drug metabolism and drug catabolism. Encompasses membrane transport, kinetics of drug-target dynamics within the cell and drug induced biochemical and cytotoxic perturbations that are the basis for drug action. Fellows are taught to utilize computer models in data analysis and experimental design. American citizenship or immigrant visa required. Contact: **Dr. I. David Goldman, Chairman, Division of Biochemical Pharmacology, Medical College of Virginia, Box 230, MCV Station, Richmond, Va. 23298.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP for Ph.D. or M.D. available now to study the relationship between changes in blood pressure and brain norepinephrine and serotonin release. Experimental techniques include in vivo electrochemistry and HPLC with electrochemical detection. Two to 3 years; \$15,000 to start. Contact: **Curt R. Freed, M.D., Associate Professor, University of Colorado Health Sciences Center, 4200 East 9 Avenue, Denver, Colo. 80262. Telephone: 303-394-8455. An Affirmative Action/Equal Opportunity Employer/Institution.**

1983

THE MICHIGAN SOCIETY OF FELLOWS invites nominations for **JUNIOR FELLOWSHIPS**. The Ph.D., received prior to appointment, is a prerequisite. Candidates should be at the beginning of their professional careers, not more than 3 years beyond completion of their degrees. Fellowships are for 3 years, beginning September 1984, with departmental affiliation and one-third time teaching or involved in departmental research. The balance of tenure is devoted to individual research. Candidates must be nominated by colleagues in their special fields. Nominating letters should include detailed statements of support and nominee's current mailing address. Application materials will be mailed to candidates after nomination. **Nominations close 31 October 1983. Completed applications due 28 November 1983.** Address to: **Michigan Society of Fellows, 3030 Rackham, The University of Michigan, Ann Arbor, Mich. 48109, telephone: 313-763-1259. An Equal Opportunity Program.**

CLINICIAN-INVESTIGATOR TRAINING PROGRAM

The Mayo Graduate School of Medicine now offers a combined research and clinical curriculum for those wishing to prepare for academic careers as independent clinician-investigators in the fields of internal medicine, dermatology, pathology, orthopedics, and otorhinolaryngology.

The program includes:

- 1) Graduate level courses and seminars in the basic sciences (for example, cell biology, molecular biology, immunology, and so forth).
- 2) Clinical training leading to specialty/sub-specialty board eligibility.
- 3) Research experience in the laboratories of established investigators to develop a foundation for independent research.



Applications may be obtained from:

Mayo Graduate School of Medicine
200 First Street, SW
Rochester, Minnesota
55905

POSTDOCTORAL FELLOWSHIPS IN ALLERGIC DISEASES

Research positions for holders of the Ph.D., M.D., or equivalent degrees are available for studies of allergen chemistry, functions of eosinophils, biosynthesis of homocytotropic antibodies and their role in animal and in human diseases, especially due to parasites, and mechanisms of inflammation of the respiratory tract and skin. Combination with advanced clinical training in allergy, immunology, and dermatology possible. Applicants must be United States citizens, non-citizen nationals, or hold an immigrant visa. Contact: **Gerald Gleich, M.D., Mayo Foundation, Rochester, Minnesota, 55905; telephone: 507-284-2511. An Equal Opportunity/Affirmative Action Institution.**

POSTDOCTORAL FELLOWSHIP IN REPRODUCTIVE SCIENCES

A fellowship is available through a training program in reproductive biology, biochemistry, and endocrinology. Numerous faculty participate in the program, and research interests include testicular biochemistry, epididymal physiology, endometrial and luteal function, fertilization, hormone receptors, and gonadotropin and steroid chemistry and mechanism. This is a NRSA and only U.S. citizens and permanent residents are eligible for appointment. For further information, please write: **Dr. Frank Chytil, Program Director, Department of Biochemistry, Vanderbilt University, Nashville, Tenn. 37232, by 15 October 1983. An Equal Opportunity Employer.**

FELLOWSHIPS

RESEARCH FELLOWSHIP—Unexpected opening to study metabolism of isolated microvessels and cultured vascular cells. Research will deal with regulation of glucose transport and metabolism and the relationship of alterations in these processes to the genesis of vascular disease in diabetes. Background in membrane biochemistry, transport, or metabolism desirable. Stipend as per NIH criteria. Starting date: immediately. Send curriculum vitae and names of three references to: **Drs. N. B. Ruderman, K. Tornheim, A. McCall, Boston University School of Medicine, 75 East Newton Street, Boston, Mass. 02118. Equal Opportunity Employer.**

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The Cancer Institute, Hahnemann University of Health Sciences, is soliciting bids for 2 billion units of natural (human diploid cell-derived) human beta interferon for clinical use in the spring of 1984. Responders should represent in their letters that their interferon is FDA-approved and give the number of their approved drug master file for appropriate cross reference under our IND. Responders should be prepared to send a representative sample of interferon for potency, purity, and stability testing. Letters and accompanying samples should be sent no later than 1 November 1983 to: **M. Sheinson, Administrator, H. L. Orlovitz Cancer Center, Hahnemann University of Health Sciences, 230 North Broad Street, Philadelphia, Pennsylvania 19102.**

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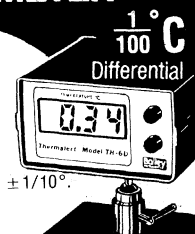


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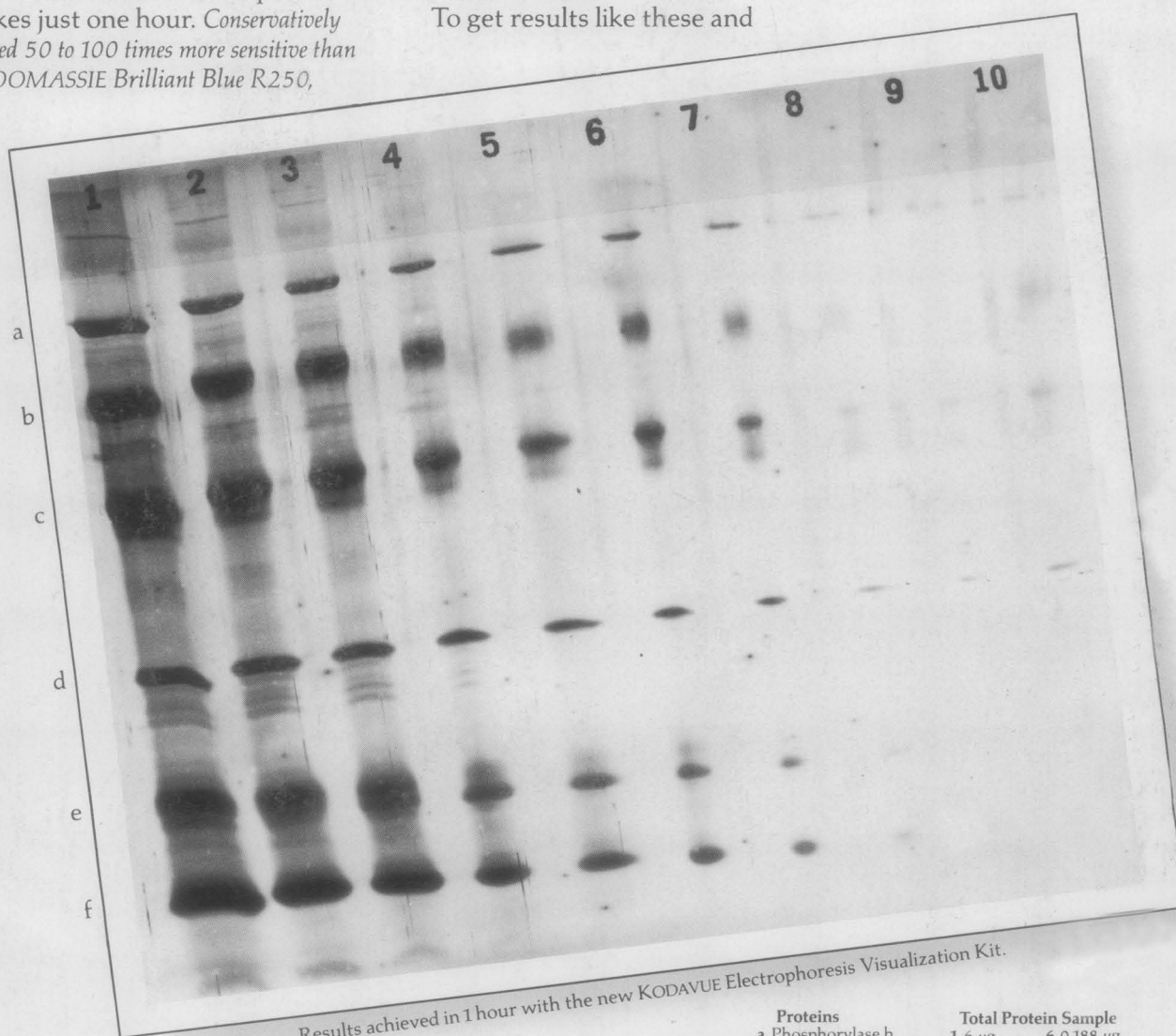
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