

Science

Science is a weekly, peer-reviewed journal with offices in Washington, D.C., U.S.A., and Cambridge, U.K., that publishes the best research in every field of science. Manuscripts should be intelligible to a general audience and must be brief and clearly written.

A more detailed Information for Contributors and multilingual versions are available at www.sciencemag.org. Competition for space in *Science* is keen, and most papers are returned without in-depth review. Priority is given to papers that reveal novel concepts of interdisciplinary interest. Manuscripts are evaluated and, if accepted, published as promptly as possible.

Categories of Signed Papers

Reports (up to ~2500 words or ~3 journal pages) present important new research results of broad significance. Reports should include an abstract and an introductory paragraph. A maximum of 30 references is suggested. Additional data can be included for publication on *Science's* World Wide Web site.

Research Articles (up to ~4500 words or

~5 journal pages) are expected to present a major breakthrough. Research articles include an abstract, an introduction, and sections with brief subheadings. A maximum of 40 references is suggested.

Technical Comments (up to 500 words) discuss papers published in *Science* within the previous 6 months. The authors of the

original paper are given an opportunity to reply. Comments and replies are reviewed and edited as needed. Summaries of the discussions appear in print; full text appears online.

Science's Compass provides broadly accessible commentary by scientists and other experts on issues of interest to *Science* readers. **Letters** (300 words) discuss material published in *Science* or problems of general interest. All letters to *Science* should include the corresponding author's postal and e-mail addresses and telephone and fax numbers. Letters are not routinely acknowledged and may be edited for reasons of clarity or space. Letter writers are generally not consulted before publication. Most other items in *Science's* Compass are commissioned by the editors, but unsolicited contributions will be considered on occasion. **Policy Forums** (up to 2000 words) present issues in science policy. **Essays on Science and Society** (up to 2000 words) highlight divergent views of the intersection of science and society. **Books et al.** (up to 1500 words) presents reviews of current books, CD-ROMs, exhibitions, and films of interest to *Science* readers. **Perspectives** (up

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Important Submission Information

Authorship. By submitting a manuscript, the corresponding author accepts the responsibility that all authors have agreed to be so listed and have seen and approved the manuscript, its content, and its submission to *Science*. Any changes in authorship must be approved in writing by all the original authors.

Prior publication. *Science* will not consider any paper or component of a paper that has been published or is under consideration for publication elsewhere. Distribution on the Internet may be considered previously published material. We reserve the right to determine if such an Internet posting compromises the originality of the paper as a submission to *Science*.

In addition, the main findings of a paper should not have been reported in the mass media. Authors are, however, permitted to present their data at open meetings but should not overtly seek media attention. Specifically, authors should decline participation in news briefings or coverage in press releases and should refrain from giving interviews or copies of the figures or data from their presentation or from the manuscript to any reporter unless the reporter agrees to abide by *Science's* press embargo. If a reporter attends an author's session at a meeting and writes a story based only on the presentation, such coverage will not affect *Science's* consideration of the author's paper.

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Electronic Submission. Also submit a copy of the manuscript on disk. *Science* can access Mac- and PC-formatted disks, Zip and Jaz disks, and CDs. RTF (rich text) format is preferred, but MS Word or WordPerfect files and LaTeX files (with a Postscript version) are also acceptable. Figures for review purposes should be jpeg or GIF files.

Submit manuscripts to *Science*, 1200 New York Ave., NW, Washington, DC 20005, USA, or to AAAS Science International, Inc., Bateman House, 82-88 Hills Rd., Cambridge, CB2 1LQ, UK.

to 1000 words) analyze recent research developments but do not primarily discuss the author's own work. **Reviews** (4 journal pages, on average) describe new developments of interdisciplinary significance and highlight unresolved questions and future directions. All undergo review. They include an abstract, an introduction that outlines the main point, and brief subheadings. A maximum of 40 references is suggested. **Tech.Views** (up to 2000 words) present current techniques and review newly released software.

Manuscript Selection

Papers are assigned by subject to an editor in our offices in Washington, D.C., U.S.A., or Cambridge, U.K. Most papers are evaluated for their interest and overall suitability by members of the Board of Reviewing Editors (see the masthead for listing). The editors at *Science* consider this advice in selecting papers for in-depth review. Authors of papers that are not highly rated are notified promptly; in most cases, we will return only two copies of the figures and no manuscript copies.

Papers are reviewed in depth by two or more outside referees. It is the policy of *Science* that reviewers are kept anonymous. Manuscripts are evaluated in terms of their technical merit as well as their merit in relation to other papers that are or have been considered. In selecting papers for publication, the editors give preference to those of novelty and general significance. Selected papers are edited to improve accuracy and clarity and to shorten, if necessary.

Papers cannot be resubmitted over a disagreement on interest or relative merit. If a paper was rejected on the basis of serious reviewer error, resubmission will be considered.

Conditions of Acceptance

When a paper is accepted for publication in *Science*, it is understood that:

- any reasonable request for materials and methods necessary to verify the conclusions of the experiments reported must be honored.
- archival data sets (such as sequence and structural data) must be deposited with the appropriate data bank and the identifier code should be sent to *Science* for inclusion in the published manuscript (coordinates must be released at the time of publication).
- authors agree to transfer copyright of the paper (including electronic rights) to *Science*. U.S. government employees sign the section of the form stating exemption from copyright laws.
- the paper will remain a privileged document and will not be released to the press or the public before publication. If there is a need in exceptional cases to publicize data in advance of publication, the AAAS News and Information Office (202-326-6440) must be consulted.

Manuscript Preparation

One page in the journal contains approximately 1000 words and one small figure. Use double-spacing throughout the text, tables, figure legends, and references and notes, and leave margins of at least 2.5 centimeters. Put your name on each page and number the pages, starting with the title page.

Titles and subheadings should be descriptive clauses, not full sentences. The maximum length is 30 characters per line, three lines maximum for reports and research articles, and 100 characters for reviews.

Abstracts explain to the general reader why the research was done and why the results are important. The abstract should be 100 words, convey the paper's main point, and outline the results or conclusions.

Text starts with a brief introduction describing the paper's significance, which should be intelligible to readers in various disciplines. Technical terms should be defined. Symbols, abbreviations, and acronyms should be defined the first time they are used. All tables and figures should be cited in numerical order.

References and notes are numbered in the order in which they are cited, first through the text and then through the table and figure legends. List a reference only once. References that are always cited together may be grouped under a single number. Any references to unpublished data should be given a number in the text and placed, in correct sequence, in the references and notes. Do not use *op. cit.* See Information for Contributors at www.sciencemag.org for examples of reference style.

Figures and tables should be submitted on separate pages from the text. For each figure, submit five high-quality prints, laser prints, or original drawings no larger than 22 by 28 centimeters. On the back of every figure, write the first author's name and the figure number and indicate the correct orientation. Authors are charged \$650 for publication of the first color figure and \$450 for each additional figure. There is an additional charge for color figures in the reprints.

Legends should be double-spaced in numerical order on a separate page. No single legend should be longer than one page. Nomenclature, abbreviations, symbols, and units used in a figure should match those used in the text. The figure title should be given as the first line of the legend.

Acknowledgments, including funding information, should be gathered into a brief statement at the end of the references and notes and will be edited to conform to *Science* style.

Preparation of Display Items

Equations and formulas should be typed with quadruple-spacing if they are to be set off from the text. Define all symbols and number all equations.

Figures should be supplied as hard copy and as a jpeg or GIF for review. Preferred formats for publication: Mac-accessible Postscript, TIFF, PICT, PICT2, and jpeg. (After acceptance of a paper, authors will receive

more specific information about electronic submission of art.) **Do not send irreplaceable artwork.** Most figures will not be relabeled by *Science* and will be printed at a width of 5.5 cm (2.25 inches or 1 column) or 12.0 cm (4.75 inches or 2 columns). Some illustrations (for example, bar graphs, simple line graphs, and gels) may be reduced to a smaller width. Symbols and lettering should be large enough to be legible after reduction.

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Avoid the use of light lines and screen shading. Instead, use black-and-white, hatched, and cross-hatched designs for emphasis. Use heavy lines or boxes for emphasizing or marking off areas of the figure.

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Composite figures should be labeled A, B, C.

Lettering in Helvetica font is preferable for figures. Use boldface type for axis labels and for the labels A, B, C in composite figures; use italic type only as it would be used in the text (for example, for variables and genes). The first letter of each entry should be uppercase; otherwise, use uppercase letters as they would be used in the text (for example, for acronyms). Avoid wide variation in type size within a single figure. In the printed version of the figure, letters should be about 7 points (2 mm) high.

Sequences may be reduced considerably, so the typeface in the original should be clear. There should be about 130 characters and spaces per line for a sequence occupying the full width of the printed page and about 84 characters and spaces per line for a sequence occupying two columns.

Tables should supplement, not duplicate, the text. Each table should be on a separate page with its legend double-spaced above the table. The first sentence of the legend should be a brief descriptive title.

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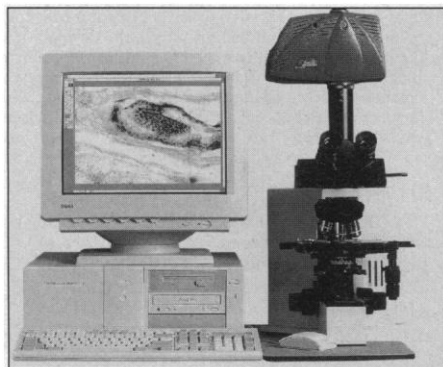
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ISOTOPIC IMAGER

The GeneTAC Isotopic Imager is designed for imaging and analyzing biochips labeled with radioactive isotopes. The instrument makes use of patented, direct beta-detection imaging and proprietary analysis technology. The manufacturer believes this imager is the only system available capable of imaging and accurately quantifying moderate-to-high density, isotopically labeled biochips. The instrument enables fast and direct quantification of biochips labeled with all commonly used radioactive isotopes, including tritium. It boasts ultrahigh spatial resolution of between 15 and 28 μm , depending on the isotope. The system is compatible with most isotopically labeled biochips having an area of up to 32 mm by 24 mm.

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Georgetown University's Institute for Cognitive and Computational Sciences is accepting applications for a faculty-level position to lead its nuclear magnetic resonance animal laboratory.

The NMR laboratory features a state-of-the-art horizontal-bore seven Tesla Bruker MRI scanner, plus a physiology laboratory, an electronics shop, and ample computational resources.

The Institute for Cognitive and Computational Sciences, housed in a brand-new research building, offers opportunities for collaboration with faculty members in the neurosciences. Focus areas include MRI/MRS changes after central nervous system injury (stroke and trauma), functional organization of the cerebral cortex, and evaluation of novel neuroprotective agents.

Initial appointment on the research track is for two years, commencing early 1999, and offers competitive salary and benefits. The ideal candidate should be experienced with *in vivo* magnetic resonance imaging and spectroscopy in animals, with a clear focus on the brain. Ph.D. or equivalent in physics, chemistry, biophysics, or related field required.

To apply, please send curriculum vitae, including names of three references, and a brief statement of research interests, to:

Guoying Liu, Ph.D.
Institute for Cognitive and Computational Sciences
The Research Building
Georgetown University Medical Center
3970 Reservoir Road N.W.
Washington, DC 20007
E-mail: liu@giccs.georgetown.edu

HEAD DEPARTMENT OF PATHOLOGY

The University of Illinois at Chicago College of Medicine invites applications for the position of Professor and Head of its Department of Pathology. The College of Medicine is among the nation's largest medical schools and part of Chicago's Westside Medical Center, a major medical complex, well-known for its large concentration of public and private health care and research facilities. The College has a 526-bed University Hospital and is building a state-of-the-art ambulatory care facility. The Department has a large, accredited Residency program in anatomic and clinical pathology. The Department participates significantly in the undergraduate medical and dental curricula, and has an active graduate program leading to M.Sc. and Ph.D. degrees.

Candidates should have an M.D. and/or a Ph.D. with a proven track record in research. Candidates should have the ability to administer a comprehensive academic and clinical program. Candidates should also be experienced with academic training.

Interested individuals should write to:

R. John Solaro, Ph.D.
Chair, Search Committee for Head of Pathology
Professor and Head, Department of Physiology
and Biophysics
University of Illinois at Chicago College of Medicine
835 South Wolcott Avenue (M/C 901)
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College of Pharmacy (M/C 877)
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In conjunction with Duke University, OTS has recently initiated semester and summer programs for undergraduates. We seek an outstanding individual to provide leadership and direction for OTS-Duke Undergraduate Programs. A Ph.D. in a relevant biological or environmental science discipline, administrative and managerial skills, and the ability to communicate in both Spanish and English are required. Knowledge of Costa Rica and experience with study abroad programs are preferred. Position is located in Costa Rica.

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In academic year 1999-2000, one or two Resident Faculty positions will be available with the OTS-Duke University Undergraduate Semester Abroad Program in Costa Rica. Faculty team-teach two science courses and an environmental policy course at the OTS field stations. A Ph.D. in a relevant biological or environmental science discipline, tropical field experience, a commitment to undergraduate teaching, and the ability to communicate in both Spanish and English are required.

For all positions: Salary and benefits competitive. Review of applications will begin January 20, 1999. Send cover letter, curriculum vitae, and names and telephone numbers of four references to: **Academic Director, Organization for Tropical Studies, Box 90633, Durham, NC 27708.** More information is available on OTS at our website: <http://www.ots.duke.edu/>. *Equal Opportunity/Affirmative Action Employer.*

BIOENGINEERING FACULTY POSITIONS

The University of Illinois at Chicago, Department of Bioengineering, invites applications for full-time, tenure-track position at the **ASSISTANT, ASSOCIATE, and FULL PROFESSOR** levels. Desired areas of interest include tissue engineering, bioMEMS, biooptics, neural-engineering, and medical imaging. The Department of Bioengineering offers B.S., M.S., and Ph.D. degrees, and has a strong emphasis on graduate training and research. The present enrollment is approximately 100 undergraduate and 50 graduate students. Additionally, an M.D.-Ph.D. program is offered jointly by the Department of Bioengineering and the College of Medicine. Campus facilities include the Microfabrication Applications Laboratory, the Biomedical Visualization Laboratory, the Biologic Resource Center, complete animal care facilities, and extensive computer resources. These positions must be filled by the fall of 1999. The candidate is expected to establish a strong research program, develop new courses in bioengineering, and contribute to the development of the new multidisciplinary activities in the Department of Bioengineering. For fullest consideration, please send a detailed curriculum vitae, reprints of publications, a statement of research interests, and the names of three references by February 1, 1999, to:

R. L. Magin, Ph.D., Chairman
Faculty Search Committee
University of Illinois at Chicago
Department of Bioengineering (M/C 963)
851 South Morgan Street, Room 218 SE
Chicago, IL 60607-7052

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FACULTY POSITION IN NATIONAL TAIWAN NORMAL UNIVERSITY

The Department of Biology invites applications for **ASSISTANT, ASSOCIATE, or FULL PROFESSOR** level. We are seeking an individual for each of the disciplines in (1) physiology, biochemistry, or biotechnology; and (2) ecology, morphology, or systematic biology. Applicants must have Ph.D. degree and postdoctoral experience and fluent in Mandarin. The appointees are expected to teach at both undergraduate and graduate level and conduct vigorous research program. Applicants should send curriculum vitae with publication list, research plan, photocopies of diploma of the highest degree, and arrange for three reference letters before February 28, 1999, to: **Dr. Lin Jin-Tun, Chairman, Department of Biology, National Taiwan Normal University, 88, Section 4, Tingchou Road, Taipei 116 Taiwan.** FAX: 886-2-29312904; e-mail: t43004@cc.ntnu.edu.tw.

You can make a difference

DuPont is a world leader in research in the chemical and biological sciences, including fundamental and applied research programs ranging from industrial bioprocesses for the synthesis of chemicals and materials to genetically improved crops and discovery of crop protection chemicals. We are now seeking a Ph.D. Principal Investigator, as well as M.S. and B.S. support staff to join multidisciplinary teams of Life Scientists.

Microbiologist

The Microbial & Industrial Biotechnology research group has a position available for a Principal Investigator in microbial physiology and ecology. The candidate should have a Ph.D. degree in microbiology or a related field, and have demonstrated leadership with a track record in the areas of microbial physiology and ecology. The successful candidate will supervise a collaborative and interdisciplinary research program utilizing state-of-the-art molecular techniques for the analysis of microbial communities for gene discovery and biodegradative potential. The individual will be expected to develop and apply new technology in areas of remediation, as well as new products and processes. A major component of the job includes participation in cross functional teams of scientists and engineers within DuPont as well as interfacing with external academic and industrial partners. Therefore, the successful candidate will have excellent communication and interpersonal skills and the ability to work in a team environment.

Job Code: 99BSE2715

Plant Molecular Biologists, Plant Biochemists and Plant Physiologists

The Materials from Biotechnology and Biochemistry/Enzymology groups have positions available for support scientists in the areas of plant molecular biology, plant biochemistry and plant physiology. Support scientists will be responsible for conducting research directed by a Principal Investigator and lab management including ordering supplies, preparing reagents, maintaining equipment and a safe and clean working environment. Candidates should have a B.S. or M.S. degree in molecular biology, biochemistry, physiology or a related field with research experience directly related to plants. Successful candidates will have experience with standard techniques in plant molecular biology and/or biochemistry and/or physiology. Experience with plant tissue culture, plant transformation and expression of genes in plants is a plus. Excellent communication and interpersonal skills as well as the ability to work in a team environment are desired. **Job Code: 99BSE2912A**

Protein Biochemist

The Biochemistry/Enzymology group has a position available for a support protein biochemist in the protein crystallography lab. Candidates should have a B.S. or M.S. degree in biochemistry or a related field with research experience in protein purification, enzyme assays, standard molecular biology techniques and over-expression of genes in plants, bacteria and/or yeast. The successful candidate will be the primary molecular biology resource for the protein crystallography lab and must have a proven track record in this area. Other responsibilities include ordering lab supplies, preparing reagents, maintaining equipment and a safe and clean working environment. Excellent communication and interpersonal skills as well as the ability to work in a team environment are desired. **Job Code: 99BSE2912B**

Bioprocess Chemical Engineer

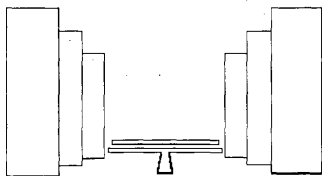
The Bioprocess Engineering group has a position available for a support chemical engineer with interest in the development of engineering processes for biotransformations to produce specialty chemicals and intermediates. Primary responsibilities include supporting a Principal Investigator by conducting experiments to develop bioreactions, catalyst immobilization techniques and down stream processes, as well as performing studies for scale-up and commercialization of bioprocesses. Candidates should have a B.S. or M.S. degree in chemical engineering or a related field with experience with setups for reactions and separations and familiarity with quantitative analysis using analytical instrumentation. Other responsibilities include instrument and lab maintenance to provide an efficient as well as safe and clean working environment. Excellent communication and interpersonal skills as well as the ability to work in a team environment are desired. **Job Code: 99BSE2912C**

Equipment/Process Chemical Engineer

The Advanced Biotechnology Engineering group has a position available for a support chemical engineer to work with a Principal Investigator in the area of equipment and process development including lab and scale-up studies. Studies will focus on the development of immobilization of biological catalysts and will also include reaction, separation and purification strategies for biotransformation and fermentation. Design, fabrication and operation of custom laboratory equipment that simulates commercial operation will also be a major component of this position. Candidates should have a B.S. or M.S. degree in chemical engineering or a related field with engineering experience. The successful candidate will also have experience with analytical instrumentation, good communication skills and an aptitude for working with crafts personnel to fabricate specialized equipment. **Job Code: 99BSE2912D**

Whether you are just starting your career or looking for growth opportunities, we encourage you to apply. We are looking for highly motivated individuals who can become members of our research teams to enhance both our success as well as their own. You will enjoy our state-of-the-art Experimental Station facilities. These positions offer a highly competitive salary and an excellent benefits package. We are located in Wilmington, DE, an area that offers an attractive lifestyle with easy access to all the cultural, academic and recreational activities on the Eastern Seaboard. Qualified candidates should send a resume and three references to: DuPont Human Resources-(Job Code), 99BSE#, 1007 Market Street, N12419, Wilmington, DE 19898. We are an equal opportunity employer. For more information on us, see our web site at www.dupont.com





THE SALK INSTITUTE

A postdoctoral position is available in the laboratory of Dr. Geoffrey Wahl at the Salk Institute to study:

- 1) Structure-function relationships in the cis acting sequences that regulate initiation of DNA replication in mammalian cells.
- 2) The link between chromatin structure control of and DNA replication initiation.

The studies will utilize state of the art biochemical, genetic, and microscopic approaches to investigate the control of DNA replication in mammalian cells. We have recently: 1) shown that DNA replication initiates at specific cis acting sequences called replicators, and 2) developed powerful genetic strategies to analyze the contributions of specific sequences in replicator function (Science 270, 815-819, 1995; Science 281, 1005-1009, 1998.). The successful candidate should have a strong background in DNA replication, transcriptional regulation, or chromatin structure and enjoy working in a team environment. Applicants should submit a current CV, names of three references, and an indication of the experimental direction they would like to pursue to:

Geoffrey M. Wahl, Ph.D, Professor
The Salk Institute for Biological Studies
Gene Expression Laboratory
10010 N. Torrey Pines Road
La Jolla, CA 92037
www.salk.edu

The Salk Institute is an Equal Opportunity Employer

Marine Sciences Faculty Positions

The Marine Sciences Research Center (MSRC) at the State University of New York at Stony Brook anticipates hiring up to 9 tenure-track faculty over the next few years. Currently, we seek applicants for the 3 vacancies described below. Two of these positions will be filled at the Assistant Professor level and one will be open in rank. Ph.D. or equivalent and evidence of excellence in research and undergraduate/graduate teaching/mentoring required.

Send statement of interests, cv, and names and addresses of 4 references to the appropriate Search Committee Chair, listed below, at MSRC, SUNY, Stony Brook, NY 11794-5000. Review of applications will begin February 12, 1999 and will remain open until filled. See <http://www.msrc.sunysb.edu> for more information. An equal opportunity/affirmative action educator and employer.

Marine Fisheries Biologist: MSRC seeks the first of additional new faculty in fisheries science who will complement the existing expertise of MSRC in applying research to problems in management of living marine resources. Areas of concentration may include finfish/shellfish ecology, population dynamics and modeling, larval ecology, population genetics, and/or conservation. Chair: Prof. D.O. Conover.

Marine Ecosystem Modeler: MSRC seeks applicants in ecosystem-level modeling who are interested in working with multidisciplinary teams to address coastal/global issues. Examples of modeling areas include, but are not limited to, energy flow and food web dynamics, water quality modeling, nutrient dynamics, and biological-physical coupling. Chair: Prof. N.S. Fisher.

Geological Oceanographer: MSRC seeks the first of additional faculty in geological oceanography. Geologists are sought with expertise in geological processes in estuaries, in the coastal zone, and/or the continental shelf. The successful applicant should demonstrate the potential for interactions with our existing faculty in such areas as geochemistry and/or physical oceanography on both global and local topics. Chair: Prof. H.J. Bokuniewicz.

**STONY
BROOK**
STATE UNIVERSITY OF NEW YORK

FUNCTIONAL GENOMICS OF DIABETES

The Max McGee Diabetes Research Center at the Medical College of Wisconsin invites applications from potential Graduate and Postdoctoral Fellows and Research Scientists in Molecular Genetics to help initiate an exciting new program using genetics to try and unravel the pathogenesis of both Type 1 and Type 2 Diabetes. In particular, we will be focusing on changes in gene expression in the beta cells of the pancreas at various stages of development or damage, and correlating these changes to genetic linkage and linkage disequilibrium data from ongoing genome scans. The research individuals will join an interdisciplinary team at the Center which will use emerging technologies and integrate sequence, mapping and expression data to produce a functional genomic framework to delineate pathways for further investigation. It is hoped that this may lead to more appropriate targets for drug and gene therapy.

Interested candidates may send a curriculum vitae with names and addresses of 3 references to:

Soumitra Ghosh, M.D., Ph.D.
Building 9, Room 1W108
National Human Genome Research Institute
National Institutes of Health
9000 Rockville Pike • Bethesda, MD 20892
Ph: 301-496-7826 • Fax: 301-480-9667
E-mail: sghosh@alw.nih.gov


**MEDICAL
COLLEGE
OF WISCONSIN**
 EOE/AA/M/F/D/V

UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL

Faculty Position

Department of Biochemistry and Molecular Biology

Applications are invited for a tenure-track position at the Assistant Professor level in the Department of Biochemistry and Molecular Biology. More senior applicants will also be considered.

The Department is seeking individuals whose research interests include biochemistry, molecular biology or molecular genetics. Special consideration will be given to applicants whose programs emphasize mechanistic biochemical approaches to their research.

We seek applicants with a Ph.D. or M.D./Ph.D.; postdoctoral experience, a record of high-quality research and a strong commitment to research and graduate education at a major research Medical School. The successful candidate is expected to establish a productive, independent research program with extramural support and to participate in graduate and medical education.

Interested applicants should forward a curriculum vitae, the names and addresses of three references and a short summary of research plans to:

Reid Gilmore, Ph.D.
Chair, Search Committee
Department of Biochemistry and Molecular Biology
University of Massachusetts Medical School
55 Lake Avenue North
Worcester, MA 01655

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

JOIN OUR GENOMICS PROGRAM FOR AGRICULTURAL DISCOVERY!



PE AgGen is the worldwide leader in providing a complete line of DNA testing services and products for animal health and productivity, plant breeding, and food and fiber production. We have immediate openings in our Davis, California laboratories for the following positions:

SCIENTIST II/SENIOR SCIENTIST

You will develop/implement high throughput systems for molecular marker discovery focusing on microsatellites (SSRs/STRs) and single nucleotide polymorphisms (SNPs). You will also evaluate new technologies and instrumentation and interact with other PE Biosystems personnel to identify new technologies impacting molecular marker discovery. Requires a PhD in a life science (Biology, Molecular Biology, Genetics) with 2 years relevant postdoctoral experience or an MS in a life science with 5 or more years experience. Excellent Molecular Biology lab skills, and experience with fluorescent DNA sequencing and fragment detection on PE Biosystems platforms are essential. Supervisory and agricultural experience a plus. REQ 11101

GENOMICS PROJECT MANAGER

You will be responsible for the overall coordination of in house and external collaborators for expression-based gene discovery projects. Includes analysis of data and modification of approaches to gene discovery projects. MS or PhD in a life science (agriculture focus preferred) and a minimum 4 years experience in scientific project management are required. Experience with critical review of diverse scientific data, plus excellent communication and organizational skills are needed. REQ 11192

SENIOR CDNA/LIBRARY SCIENTIST

You will be responsible for the isolation, purification, and quality control of plant mRNA, as well as the management of the cDNA library team. This will include cDNA library construction focused on subtraction and normalization for cloning of differentially expressed genes. Requires a PhD in a life science and at least 4 years experience with plant mRNA and cDNA manipulation, expertise in quantitative PCR (TaqMan experience a plus), and proficiency in all basic molecular biological techniques. Excellent communication and project management abilities, plus strong computer skills are also necessary. May entail some travel to Europe. REQ 11198

CDNA/LIBRARY SCIENTIST (POSTDOC)

Responsibilities include plant mRNA isolation and purification, cDNA library construction focused on subtraction and normalization for cloning of differentially expressed genes, and fluorescent DNA sequencing and fragment detection on PE Biosystems platforms. Requires a PhD in a life science with an agriculture focus (2 years postdoctoral experience), expertise in quantitative PCR (TaqMan experience a plus), and proficiency in all basic molecular biological techniques. Strong computer skills are a must. May require some travel to Europe. REQ 11190

SENIOR BIOINFORMATICS SCIENTIST

You will identify novel genes by analysis of gene expression, DNA sequence, and genetic mapping data, and perform advanced base calling and fragment assembly. You will also direct and implement bioinformatics strategy for PE AgGen's Agricultural Genomics Program, including the development of novel analysis and archival tools. A PhD in Bioinformatics, Computational Biology, Life Science, or Computer Science with 4 years experience (agriculture experience a plus) and an extensive history with database search and comparison algorithms are required. UNIX, PERL, JAVA and BioMerge/BioLims experience a plus. REQ 11195

BIOINFORMATICS SCIENTIST

You will perform high throughput base calling and sequence assembly, analyze high throughput gene expression data, and implement database search and sequence analysis with the goal of open reading frame (ORF) and gene discovery. In addition, you will direct software engineers in the development of novel analysis and archival tools. This position requires a PhD in Bioinformatics, Computational Biology, Life Science, or Computer Science with relevant postdoctoral experience. A background in UNIX, PERL, HTML, and JAVA and experience with BioLims/BioMerge are beneficial. Agricultural experience a plus. REQ 11191

DATABASE ADMINISTRATOR

You will be responsible for the development/maintenance of the laboratory information management system (LIMS) and database for archival of genomic data. This includes the automation of data access and data flow between multiple sites and the implementation of GUI and Web-based interface tools for information transfer. Requires expertise in large scale database management along with SQL, PERL, UNIX, and ORACLE utilities and tools experience. JAVA programming and experience with analysis and scientific databasing a plus. REQ 11197

NETWORK/SYSTEMS ADMINISTRATOR

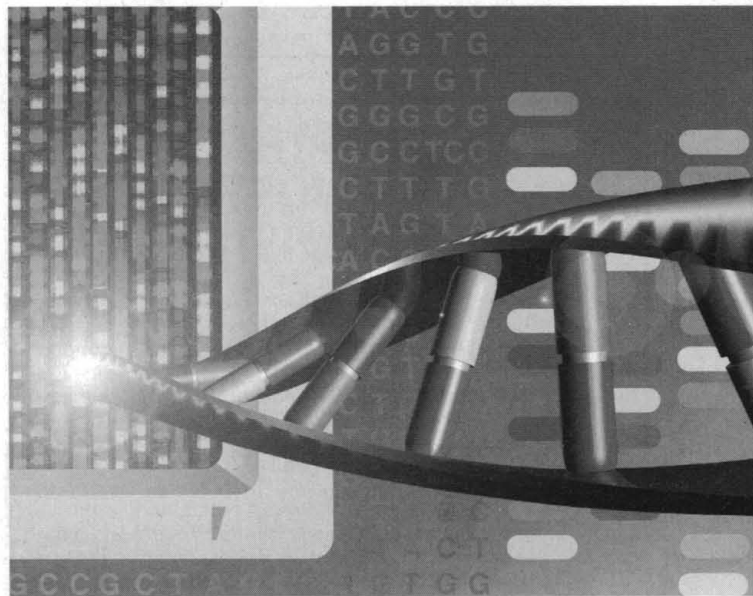
You will develop, implement, and maintain LAN infrastructure, produce user desktop applications, and install, troubleshoot and maintain software and hardware on PC, Mac and UNIX platforms. You will also support the information systems needs of the genomics group. PC, Mac, UNIX hardware and software experience is essential. Experience with LAN and WAN administration and developing intranet structure is highly beneficial. REQ 11194

SOFTWARE DEVELOPMENT ENGINEER (2 POSITIONS)

Work with bioinformatics scientists to develop novel sequence analysis tools and 'data mining' software. This will involve devising software solutions to automate tasks and developing parsers and wrap around programs to query Oracle databases (BioMerge). HTML, JAVA, PERL, DGVA, C++ experience plus RDBMS and SQL expertise are needed. Bioinformatics or previous experience in analysis and archival of biological data a plus. REQ 11195 (Santa Fe, NM)/11196

GENOMICS BUSINESS DEVELOPMENT

Using your in-depth knowledge of the gene discovery and characterization process and your familiarity with the agricultural industry, you will help key opinion leaders understand the importance of genomics to their business. You will be responsible for developing and driving PE AgGen's strategic business programs in the area of Seed, Crop Protection and Animal Health Genomics. You will develop long-term partnerships and negotiate contracts with customers and collaborators. Requires a PhD or MS in a life science (agriculture focus preferred). Strong presentation, written and negotiation skills are a must. Business degree and contract development experience is a plus. REQ 10314



PE AgGen is a wholly owned subsidiary of Perkin Elmer Corporation. We offer a competitive salary and benefits package with advancement potential for your career. For consideration, please send your resume to: PE AgGen, Attn: CA, 1756 Picasso Ave., Davis, CA 95616-5143. You may also fax to (530) 756-5143, email us at malandms@pebio.com or see our home page on the WWW at <http://www.perkin-elmer.com> for more details. PE Biosystems is an equal opportunity employer.

PE AgGen, Inc.
APPLIED DNA SERVICES

PE Biosystems
A DIVISION OF PERKIN-ELMER



UNIVERSITY OF PENNSYLVANIA

Department of Pathobiology School of Veterinary Medicine

Applications are invited for a tenure track faculty position to work in the area of oncology. The individual chosen will have the opportunity to collaborate with basic scientists and clinical oncologists within the School of Veterinary Medicine as a member of the Mari Lowe Center for Comparative Oncology, and in the Cancer Center within the School of Medicine. In addition, there are numerous opportunities to interact with faculty at the Wistar Institute, the Institute for Human Gene Therapy, and the Fox Chase Cancer Center. The position is broadly defined and may be filled by individuals who use animal models of cancer and/or apply molecular approaches to examine basic aspects of oncology, such as signal transduction, host immunologic responses, cell cycle control, molecular manipulations of tumor cells, mechanisms of neoplastic transformation, angiogenesis, genetics or molecular and cellular mechanisms for metastasis.

Candidates must have a PhD, a PhD/VMD, or a PhD/MD, or equivalent and have sufficient post-doctoral experience to demonstrate both significant accomplishments and outstanding promise. The individual will be expected to establish an independent extramurally funded research program, and will participate in the teaching of veterinary and graduate students. We anticipate this appointment to be at the Assistant Professor level but outstanding individuals could be considered for a more senior level position.

Send curriculum vitae, a statement of research interest and the names of 3 references by **February 26, 1999** to: **Chair, Search Committee, Department of Pathobiology, School of Veterinary Medicine, 216 Rosenthal, 3800 Spruce Street, Philadelphia, PA 19104-6008.** *The University of Pennsylvania is an equal opportunity/affirmative action employer.*



COLUMBIA EARTH INSTITUTE

Postdoctoral Fellowships for Research on the Global Environment

New or recent Ph.D.s in engineering, natural sciences, or social sciences are invited to apply for postdoctoral fellowships at the Columbia Earth Institute. The Earth Institute is a Columbia University-wide research and educational effort on the global environment. Details about the Columbia Earth Institute and its members and projects can be found at our Web site: www.earthinstitute.columbia.edu

The fellowships, each ordinarily for a period of 24 months, will provide opportunities for research and further training in areas relevant to understanding the global environment. Each fellow will be supervised by one or more Earth Institute members and will work in appropriate departmental facilities or laboratories. There will also be numerous opportunities for discussion and collaboration with fellows and Earth Institute members in other disciplines.

Fellowship applications should contain a plan for research and study for a period of 2 years, and the plan should note in which general research area the work would be performed. Multidisciplinary projects offering collaboration opportunities are encouraged.

Letters of application, curricula vitae, and three (3) letters of recommendation should be sent to: Fellow Selection Committee, Columbia Earth Institute, 535 West 116th Street (Mail Code 4335), Columbia University, New York, NY 10027.

Applications submitted by February 15, 1999, will be considered for fellowships starting in the summer or fall of 1999, and fellowship offers will be made about March 15, 1999.

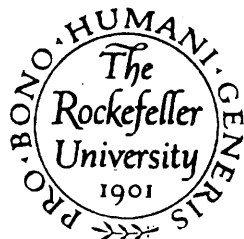
COLUMBIA UNIVERSITY

Columbia University is an affirmative action/equal opportunity employer.
Minorities and women are encouraged to apply.

TENURE-TRACK FACULTY OPPORTUNITIES IN CHEMISTRY

The Rockefeller University wishes to appoint a number of scientists to the tenure-track rank of Assistant Professor/Head of Laboratory in Chemistry, with an emphasis on basic research using novel chemical reagents in studies of fundamental biological processes. The search is part of an initiative to expand The Pels Family Center for BioChemistry and Structural Biology at The Rockefeller University.

Applicants should have demonstrated outstanding potential for independent research in this area and should send a curriculum vitae (including publication list), a statement of current and future research interests (no longer than 3 pages), and the names and addresses (including telephone, facsimile and e-mail information) of three referees (who should be asked to send their references without delay) to: **Dr. Stephen K. Burley, The Rockefeller University, Box 78, 1230 York Ave., New York, NY 10021-6399.** The closing date for applications is **April 15, 1999.**



The Rockefeller University is an Affirmative Action/ Equal Opportunity Employer. Further information about the research and educational programs of The Rockefeller University can be found on the Internet at www.rockefeller.edu.

Competition For Kenneth A. Klivington Fellowship in Theoretical Bioelectromagnetics

The Fetzer Institute announces the availability of two two-year postdoctoral research fellowships in theoretical bioelectromagnetics. The purpose of the fellowship is to strengthen the theoretical understanding of the interactions between weak electromagnetic fields and biological systems. Particular emphasis will be placed on the application of principles of nonlinear dynamics to the proposed research.

ELIGIBILITY: Candidates must hold a Ph.D. or equivalent degree in an appropriate discipline. In order to foster collaboration between theoreticians and experimental scientists, candidates must also have made arrangements to work in the laboratory of a senior scientist who conducts experimental research.

APPLICATION: Candidates must submit a letter of application stating their research interest and presenting an outline of a research plan. The letter must be no longer than three pages. A C.V. including authored publications must accompany the letter. Candidates must also arrange to have a senior member of the chosen laboratory submit a letter directly to the Fetzer Institute that includes a description of the resources available to the candidate. In addition the candidate must have two supporting letters submitted directly to the Fetzer Institute by senior scientists familiar with the candidate's work. Send all materials to: **Bioelectromagnetics Fellowship, The Fetzer Institute, 9292 West KL Avenue, Kalamazoo, MI 49009-9398.**

DEADLINE: Applications must be received by the Fetzer Institute by May 15, 1999. Applications arriving after this date will not be accepted. The Institute will notify the successful candidate by June 30, 1999.

TERMS: The tenure of the fellowship begins in the fall of 1999 and lasts for two years. The fellowship provides a salary commensurate with the candidate's experience. The fellowship also includes an allowance for research expenses and travel. The Fetzer Institute does not provide indirect costs to the host institution.

FETZER INSTITUTE



Director for Clinical Research



The UCSF Cancer Center invites applications for the position of Director for Clinical Research and the Doris and Donald Fisher Distinguished Professorship in Clinical Cancer Research. We seek an outstanding clinical research investigator with significant experience in developing and enhancing clinical research and managing clinical research operations and outreach. The successful candidate will organize, integrate, and enhance all clinical cancer research (i.e., patient-based research focusing on studies of cancer risk, diagnosis, and treatment) in an exciting, interactive research environment in the Cancer Center's state-of-the-art research facilities.

The University of California is an Equal Opportunity/Affirmative Action Employer. Minority candidates and women are encouraged to apply.

Applicants should send a curriculum vitae, a short statement of research plans, and the names of at least three references to:

Frank McCormick, PhD, Director
UCSF Cancer Center
University of California San Francisco
2340 Sutter Street, Room S-335
San Francisco, CA 94143-0128



University of California
San Francisco

UCSF Cancer Center Web site at <http://cc.ucsf.edu>

DIRECTOR NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES NATIONAL INSTITUTES OF HEALTH

The National Institutes of Health invites applications for the position of Director, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The Director provides national leadership and direction of a major national Federal research program whose primary responsibility is to conduct, foster, and support basic and clinical research into diabetes and metabolic disorders; digestive and nutritional disorders; diseases of the kidney and urinary tract; and blood abnormalities.

This is a position in Senior Executive Service with a salary ranging from ES-1 to ES-6 (currently \$106,412 to \$125,900, including locality pay). Physicians may be eligible for a Physicians Comparability Allowance of up to \$20,000 per year. A recruitment bonus of up to 25% of base pay may be available to a non-Federal applicant selected for this position, and a relocation bonus of up to 25% of base pay may be available to a permanent Federal employee who must relocate to accept this position.

Applicants must meet the minimum educational requirements, or equivalent combination of education and experience, for the Medical Officer, GS-602 series, or the Health Scientist Administrator, GS-601 series, and the following mandatory qualifications: (1) Senior level research experience and knowledge of research programs in one or more scientific areas related to diabetes, digestive diseases, or kidney diseases research such as endocrinology, metabolism, nutrition, blood disorders and urinary tract. Extensive knowledge of research methodology and an understanding of biomedical and behavioral sciences as they relate to diabetes, endocrinology, metabolic disorders, digestive diseases, nutritional disorders, or diseases of the kidney, blood disorders, and urinary tract. Should be known and respected within his/her profession, both nationally and internationally, as a person of outstanding scientific competence; and 2) Ability to provide leadership/management of a research program in the diseases or disorders described above of national and international scope and complexity involving dealings with outside groups and extensive planning, progress assessment, and analysis of program objectives; development of plans for the resolution of major operational problems and issues; and management of financial and human resources, including selecting, managing, and motivating staff using fair and equitable staffing/recruitment practices, and implementing EEO and affirmative action principles and objectives.

The vacancy announcement (#DK-99-0001) may be obtained by calling 301-496-1443. Applicants are required to submit a Curriculum Vitae or resume; bibliography; or any other written format which addresses the requirements indicated in this announcement; and a detailed statement addressing the mandatory qualifications, to the following address:

National Institutes of Health
Division of Senior Systems
Executive Plaza South, Suite 100
6120 Executive Boulevard
Rockville, Maryland 20852
Attention: Carmen Garcia

Applications must be postmarked no later than March 4, 1999

- Applicants with access to the Internet's World Wide Web may browse the NIH Home Page to view the announcement and may apply through the Web at URL: www1.od.nih.gov/ohrm/hrinfo/ses/vacancy/
- Applicants may E-Mail their application material via E-Mail to garcia@od.nih.gov

NIH IS AN EQUAL OPPORTUNITY EMPLOYER



St. Jude Children's Research Hospital

ALSAC • Danny Thomas, Founder

The Molecular Pharmacology Department at St. Jude Children's Research Hospital has an opening for a faculty member at the Assistant/Associate level. Candidates are sought with an interest in developing an independent research program in an area related to the treatment of childhood cancers. Outstanding applicants with experience in any area relevant to cancer treatment will be considered; candidates with experience in the fields of DNA repair, apoptosis, or the treatment of brain tumors are especially encouraged to apply. Candidates at the Associate Member level should have an established research program supported by peer reviewed grants.

The Molecular Pharmacology Department is a basic science department at St. Jude Children's Research Hospital. Opportunities are available for collaboration with other basic science departments in the areas of biochemistry, genetics, tumor cell biology, immunology, virology, and developmental neurobiology, and with clinical programs involved in the treatment of solid tumors and hematological malignancies. A generous start-up package is available for an outstanding candidate. St. Jude Children's Research Hospital was founded by Danny Thomas, and continues to receive support for research and clinical programs through the fund-raising efforts of the American Lebanese Syrian Associated Charities (ALSAC).

Please send a curriculum vitae, a three-page description of proposed research, and three letters of recommendation to:

Chair, Faculty Search Committee
Molecular Pharmacology Department
St. Jude Children's Research Hospital
332 N. Lauderdale, Memphis, TN 38105

www.stjude.org

St. Jude Children's Research Hospital is an
Equal Opportunity/Affirmative Action Employer.

ANNOUNCEMENT OF A FACULTY POSITION IN THE DEPARTMENT OF AVIATION SCIENCES AT BAYLOR UNIVERSITY

The Department of Aviation Sciences (AVS) at Baylor University is accepting applications for a position at the level of assistant professor.

The AVS Department offers a 4-year BS in Aviation Sciences. In addition to the academic program at Baylor, AVS students complete a curriculum of flight training, receiving commercial, instrument, multi-engine and flight instructor, airplanes and instrument ratings.

AVS has a very active research and development program in the area of renewable aviation fuels and air pollution research using instrumented aircraft. The program is operated under the Renewable Aviation Fuels Development Center (RAFDC).

Desirable qualifications and experience include:

- A background in aviation education at the university level. Most desirable would be administrative experience and curriculum development related to aviation.
- A demonstrated commitment to excellence in teaching.
- An advanced degree in a science field which could support the RAFDC research program. Experience in fuels research, particularly in aviation, and/or in air pollution research, especially in the use of aircraft in this area.
- A background in writing grant proposals, obtaining and administering grants, particularly in the areas described above.

Salary will be commensurate with experience and qualifications.

Baylor is a Baptist university affiliated with the Baptist General Convention of Texas. As an Affirmative Action / Equal Employment Opportunity employer, Baylor encourages minorities, women, and persons with disabilities to apply.

Please apply to:
P.O. Box 97413, Waco, TX 76798. E-mail: Maxwell_Shauck@baylor.edu.

Applications will be reviewed beginning January 2, 1999, and will be accepted until the position is filled. To ensure full consideration of your application, your application should be completed by January 20, 1999.

Faculty Position in Neurophysiology Department of Neurology University of California, San Francisco Neurology Alcohol Research Program & The Ernest Gallo Clinic and Research Center

The University of California, San Francisco Neurology Alcohol Research Program and The Ernest Gallo Clinic and Research Center seek highly qualified applicants for a faculty position at the Assistant Professor/Associate Professor level to pursue research in alcoholism and drug addiction. The Alcohol Research Program is a multidisciplinary team organized to investigate fundamental mechanisms of alcohol addiction. We have developed innovative approaches in molecular and cell biology, human genetics and behavioral pharmacology, and we have pioneered in bringing invertebrate genetics to the forefront of alcohol research. As part of a major expansion, we seek applications from qualified and motivated individuals who have completed 3-5 years of relevant post-doctoral training or independent research. Candidates should hold an MD degree with specialty training in Neurology and be capable of directing a rigorous basic research program in neurophysiology. Recruits are expected to participate in the teaching activities of the UCSF Department of Neurology and the UCSF Center for the Neurobiology of Addiction. For further information please view our web site at <http://gallo.ucsf.edu>. Applicants should send their curriculum vitae and the name, address, and phone number of four references to:

Neurophysiology Search Committee
Robert O. Messing, M.D.
University of California, San Francisco
Gallo Center
Building 1, Room 101
1001 Potrero Avenue
San Francisco, CA 94110



1798-1998 TM

Announcing the James R. Petersdorf Endowed Chair in

CNS INJURY RESEARCH

The Kentucky Spinal Cord Injury Research Center at the University of Louisville School of Medicine is looking for a new faculty member at the Associate or Full Professor level. The position will have a primary appointment in the Department of Neurological Surgery at the University of Louisville School of Medicine with a joint appointment in an appropriate basic science department.

The candidate's research focus should complement existing programs in white and gray matter replacement strategies, cell biology of neural stem and precursor cells, growth promoting/inhibiting molecules, spinal cord locomotor systems, treadmill rehabilitation techniques, and the molecular/cell biology of injured spinal cord.

The successful applicant will be an internationally recognized leader in his/her field, with a strong history of publication, funding, and scientific accomplishment. The Endowed Chair represents a commitment on the part of the Alliant Health System, the Kentucky Spinal Cord and Head Injury Research Trust, and the University of Louisville to building a strong program in spinal cord injury.

The University of Louisville is an Affirmative Action, Equal Opportunity Employer.

Applications should be received by February 1, 1999, and should include curriculum vitae, three references, and a summary of research accomplishments and future directions.

Send applications to :

Christopher B. Shields, M.D., Chairman
Department of Neurological Surgery
210 E. Gray St., Ste. 1102
Louisville, KY 40202

For additional information call (502) 629-5511





TWO CHAIR POSITIONS

University of Washington
Department of Environmental Health
Department of Epidemiology

The School of Public Health and Community Medicine at the University of Washington invites applications and nominations for the positions of Professor and Chair in the Department of Environmental Health and in the Department of Epidemiology. Salary commensurate with experience and qualifications.

Environmental Health: This multifaceted department is comprised of research and training programs in toxicology, industrial hygiene and safety, occupational medicine, and environmental health technology. The department has 37 faculty, offers BS, MPH, MS and PhD degrees, and maintains a vibrant research program. Several major center grants are supported by NIOSH and EPA. The department has extensive ties with the Washington State Department of Labor and Industries which provide opportunities for graduate training, field research, and laboratory services in collaboration with business, labor, state agencies, and the public health community. Seeking an individual with an outstanding research record in environmental health or related discipline committed to academic excellence who can provide dynamic leadership for the department's diverse teaching, research, and service roles. Position requires an earned doctorate in an appropriate discipline.

Epidemiology: The department is a recognized leader in the field, with special strengths in cancer, cardiovascular disease, public health genetics, nutrition, infectious disease, and injury prevention. There currently are 46 full-time faculty, 51 MPH students, 21 MS students, and 56 PhD students. The department has strong collaborative ties with the Fred Hutchinson Cancer Research Center, the UW School of Medicine, Group Health Cooperative of Puget Sound, and state and local public health agencies. Qualifications: doctoral degree in medicine or epidemiology, or other relevant discipline; a national/international reputation in research, scholarship, teaching, and professional activities; and demonstrated administrative skills.

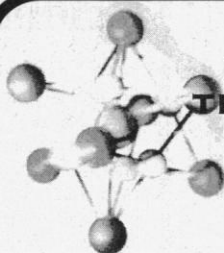
Please send CV and letter of interest by
March 15, 1999 to:

Chair, Env. Health Search Committee
or

Chair, Epidemiology Search Committee
University of Washington, Box 357230
Seattle, Washington, 98195-7230

The University of Washington is building a culturally diverse faculty and strongly encourages applications from female and minority candidates. AA/EOE.

BIOTECHNOLOGY



**IF YOU'RE GOING TO MAKE
THE NEXT BREAKTHROUGH IN
BIOTECHNOLOGY,
YOU'RE GOING TO NEED
A LOT OF PROTEIN.**

ZymoGenetics, Inc. is a biotechnology company located in Seattle's historic Lake Union Steam Plant. As a subsidiary of NOVO NORDISK, the world's largest producer of industrial enzymes, ZymoGenetic's mission is to identify protein therapeutic opportunities and to take selected projects as far as clinical proof of concept studies. We offer intellectual challenge, state-of-the-art facilities and a generous benefits package. We are currently seeking qualified candidates for the following positions:

RESEARCH ASSOCIATE III

The Department of Genetics is seeking a Research Associate III to participate in the evaluation of candidate protein therapeutics. Your primary responsibility will be the rapid construction of gene targeting vectors for use in generating knockout mice. The ideal candidate will have a BS or MS degree in an appropriate field and at least 3 years of molecular biology laboratory experience, with a strong emphasis on recombinant DNA technology. Extensive experience in the following techniques: DNA sub-cloning, exonuclease digestion, genomic library screening, PCR, restriction mapping, sequencing, site-directed mutagenesis, and Southern Blotting. Experience with BAD and/or YAC manipulation would also be advantageous. The desired candidate is a self-starter and team player with excellent organizational and written/verbal communication skills. Job Reference #32N598

RESEARCH ASSOCIATE II/III, PEPTIDE CHEMIST

The Protein Biochemistry Department is seeking a Research Associate II/III (Peptide Chemist) with a BS in any of the life sciences and 2-3 years of experience in peptide and protein synthesis, purification and analytical characterization. Additional background knowledge or experience and interest in protein purification/protein folding and medicinal chemistry will be considered a big plus. Job Reference #33R398

RESEARCH ASSOCIATE II/III/ASSOCIATE SCIENTIST

The histology section of the Experimental Pathology group is hiring an experienced Research Associate/Associate Scientist. Strong skills in processing, sectioning and staining frozen tissues required. Additional responsibilities include: reagent preparation, fixed tissue trimming and processing, paraffin section microtomy, routine and special staining, immunohistochemistry, and other duties as assigned. The successful candidate will have training and experience in histotechnology and possess the ability to establish and consistently and accurately follow protocols. Requires an AA degree in Histotechnology or HT/HTL (ASCP) certification with 2 or more years of experience in a histology laboratory or BA/BS with at least 2 years of experience with histologic techniques. HT/HTL (ASCP) certification and experience in research histology desirable but not required. Job Reference #35N898

SENIOR SCIENTISTS

(Two Positions available in the Immunology Department)

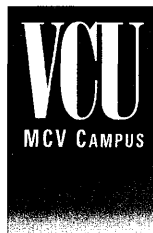
The Department of Immunology is seeking two Senior Scientists to support our work in Discovery Biology toward developing novel protein therapeutics. The successful candidates will design and implement appropriate in vitro and in vivo assays that test the activity of novel ligands and receptors. Candidates will have a thorough background in immunology/inflammation with an established record in cytokine biology and animal models. Must be able to demonstrate proper strategic design in meeting project goals and use professional conception to contribute to the development of the company and its guiding principles. Requires a Ph.D. in a scientific discipline and 2-5 years of experience in a research environment. Job Reference #35R298

SCIENTIST/SENIOR SCIENTIST

We are seeking an in vivo biologist to join our team testing novel proteins in animals to determine their functions and possible therapeutic utility. Additional duties include design, performance and analysis of animal experiments to identify biologic activities of protein agents, as well as identification and use of appropriate animal models for evaluation of therapeutic potential. Strong written and oral communication skills are required. Versatility and flexibility are essential; must be able to work in multidisciplinary teams. Expertise in one or more of the following areas useful: thrombosis/vascular injury, evaluation of transgenic and knockout phenotypes, inflammation, angiogenesis, developmental biology. Applicants should have a Ph.D., DVM, or MD and 2-6 years of academic or industrial experience in physiology, pharmacology, or pathology. Job Reference #35N498

Job description and salary are commensurate with experience. For confidential consideration, forward your resume and cover letter noting Job Reference # to: ZymoGenetics, Inc., Attn: Human Resources, 1201 Eastlake Avenue East, Seattle, WA 98102. Fax: (206) 442-6658. E-mail: jobs@zgi.com. EOE.

ZYMO GENETICS



Virginia Commonwealth University

MOLECULAR BIOLOGIST IN DNA REPAIR AND SIGNAL TRANSDUCTION

The Departments of Radiation Oncology (<http://views.vcu.edu/mcvro>), Pharmacology and Toxicology, and the Massey Cancer Center at the Medical College of Virginia, Virginia Commonwealth University, invite outstanding

applications for a tenure-track faculty position as Assistant/Associate Professor. The successful applicant, with a Ph.D. and/or M.D. degree and several years of postdoctoral experience, is expected to develop an independent and extramurally funded research program, to develop research collaborations with other members of the program and to teach postdocs, medical residents, and graduate students. The successful applicant is expected to complement a highly interactive, multidisciplinary program that investigates the molecular mechanisms of signal transduction, cell proliferation, and apoptosis underlying tumor radioresistance, and applies novel approaches to radiation treatment using drugs and gene therapeutic tools. Applicants with interests in DNA repair, signal transduction, and cellular redox effects are particularly encouraged to apply. Applications should include a CV, reprints of publications, a statement of research plans, and three letters of recommendation. This material should be sent by March 1, 1999, to: **Kristoffer Valerie, Ph.D., Department of Radiation Oncology, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0058.**

VCU is an Equal Opportunity / Affirmative Action Employer.

Science

ASSOCIATE EDITORS

Science is soliciting applications for three Associate Editor positions. We seek applicants with a broad range of interests and research experience. Two of the positions are in the biological sciences. Scientists with knowledge of one or more of the following fields are particularly encouraged to apply: molecular evolution, ecology, developmental biology, structural biology, microbiology, and cell and molecular biology. The third position is in the physical sciences. Applicants in the atmospheric and ocean sciences and in climate and paleoclimate research are particularly encouraged to apply. Applicants should have two or more years postdoctoral experience, multiple publications, and show a breadth of knowledge of cutting-edge research in several fields. Responsibilities include managing the review, selection, and editing of manuscripts, solicitation of Review and Perspective pieces, and fostering contacts and communication with the scientific community. One of these positions includes an opportunity to explore new modes of information technology and innovations in teaching science associated with a www project. Previous editorial experience is not required. Positions could be filled in either our Cambridge UK or Washington DC offices.

For all positions, please submit a cover letter describing qualifications and salary requirements, resume, and contact information for three or more references to:

Mr. Gregory Stokes
The American Association for the Advancement of Science
Human Resources Department, Suite #100
1200 New York Avenue, Washington, DC 20005

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Women In Science

Recruitment Advertising Supplement

Issue Date: 12 February 1999

Space Reservation Deadline: 26 January 1999

Feature your recruitment message in this full-color supplement that acknowledges the contributions of women to the scientific work force.

This issue will be distributed to the members of the Association For Women In Science (AWIS).

To advertise, contact:

U.S. – Gabrielle Boguslawski (718) 491-1607

U.K. – Debbie Cummings +44 0 1223 326 500

Australia – Keith Sandell +61 29922-2977

Japan – Mashy Yoshikawa +81 3 3235-5961

Science

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Procter & Gamble

MICROBIOLOGISTS Anti-Infective Research

Consider a career with a company committed to world-class research and product development. Procter & Gamble Pharmaceuticals has immediate openings for Microbiologists in their Anti-Infective Research Department located in suburban Cincinnati, Ohio.



After receiving your resume we will contact you only if we find a sufficient match to justify further steps in the recruiting process. P&G is an Equal Opportunity Employer.

• BS or MS in Microbiology or Medical Technology

BS or MS in Microbiology or Medical Technology. The successful candidate will join a Core In Vitro Microbiology Group which supports all Anti-Infective Drug Discovery projects. Responsibilities will include conducting a variety of microbiologic assays including bacterial susceptibility testing on robotic platforms, bactericidal kinetics, and/or resistance development. The person will interface with project teams to coordinate testing and to report results. Laboratory experience and excellent communication skills are required. Two to five years of relevant experience is preferred. Clinical microbiology experience is desired. Reply to job code: NCE9902

• BS/MS + 8 years exp. in Microbiology or Medical Technology; or PhD in Microbiology

The successful candidate will join a Core In Vitro Microbiology Group which supports all Anti-Infective Drug Discovery projects. This person will have responsibility for the automated in vitro susceptibility assays of the department which will require directing one or more associates in the scheduling and execution of assays, implementing and monitoring a QC program for the assays, and introducing advances in robotics to the program as appropriate. The person will also have primary responsibility for maintaining and updating the department's bacterial culture collection. The person will interface with all project teams and will implement new microbiologic assays as appropriate to meet project needs. Clinical microbiology experience and excellent communication skills are required. Reply to job code: NCE9903

Procter & Gamble is a world leader in the research, development, manufacture, and marketing of a wide variety of consumer products. Annual sales exceed \$37 billion, and our R&D investment is more than \$1 billion. These positions will provide excellent opportunities for personal and professional growth. P&G offers a competitive salary and benefits package, placing us among the top of U.S. firms.

For confidential consideration, please send a letter of introduction and resume to the following address indicating the correct job code:

**P&G Pharmaceuticals
Recruiting Office
Dept. (insert job code)
11450 Grooms Road, Box D51
Cincinnati, OH 45242**

THE SCHOOL OF ENGINEERING AT THE UNIVERSITY OF CALIFORNIA, IRVINE invites application for two faculty positions in BIOMEDICAL ENGINEERING beginning July 1, 1999. One position is at the Full Professor rank, and the second position is at the Assistant Professor rank. The successful candidate for the senior position will have an established track record of a rigorous extramurally funded research program in computational science technologies related specifically to biomedical problems. Research areas that are of particular interest include novel approaches to:

- * biomedical image/signal analysis, processing and understanding
- * parallel and/or distributed biomedical computational systems
- * biomedical information management systems
- * quantitative optical image analysis
- * computational neuroscience
- * quantitative modeling of biological systems

The successful candidate for the junior-level position will have a Ph.D. in Mechanical, Computer, Electrical, Chemical, or Biomedical Engineering, or closely related areas, and will be expected to develop a rigorous extramurally funded research program. Research areas that are of particular interest include:

- * biomedical microelectromechanical systems
- * biomedical nanoscale microscopy
- * microchip-based biomolecular genomic or proteomic systems
- * cellular biomechanics

Both candidates will initially be part of an existing department in the School of Engineering, but will move to the anticipated Department of Biomedical Engineering by 2001. In addition, the candidates will participate in the teaching and research activities of both undergraduate and graduate programs in biomedical engineering. The University of California, Irvine is situated in Orange County's rapidly growing high technology sector that includes more than 150 biomedical companies.

For full consideration, candidates should send their curriculum vitae, a brief (no more than 2 pages) description of current and future research and teaching interests, and at least three letters of reference by March 1, 1999 to:

**Search Committee Chair, Biomedical Engineering
School of Engineering, Electrical & Computer Engineering
University of California, Irvine
Irvine, CA 92697-2625**

Submission via electronic mail can be made to: llegh@uci.edu
You can visit our website at: <http://www.eng.uci.edu>



The University of California is an Equal Opportunity Employer committed to excellence through diversity.

POSITIONS OPEN

DIRECTOR EXTRACELLULAR MATRIX RESEARCH GROUP

Department of Pathology
Louisiana State University
School of Medicine in Shreveport

The Extracellular Matrix Research Group within the Department of Pathology is seeking applicants for the position of Director of Research. This is a tenure-track appointment at the Associate or Full Professor level, depending on qualifications, and is open to individuals possessing either M.D., Ph.D., or M.D.-Ph.D. degrees. Applicants must have a track record of research excellence, current grant funding, and experience mentoring graduate students and Postdoctoral Fellows. The responsibilities of the position include the organization of departmental research activities and leading the development of multidisciplinary research endeavors. The successful candidate will have limited teaching/clinical responsibilities, primarily defined by their own personal interests and training.

The ideal candidate should have expertise in one of the following areas: cell adhesion and signaling, cell and molecular biology of extracellular matrix molecules, modulation of growth factor activity, or gene expression by matrix molecules, and/or vascular wall pathology.

Applicants should submit a curriculum vitae, list of at least three references, and a brief description of research interests and direction by February 1, 1999, to: Guillermo A. Herrera, M.D., Professor and Chairman, Department of Pathology, Louisiana State University Medical Center in Shreveport, P.O. Box 33932, Shreveport, LA 71130. LSUMC is an Affirmative Action Employer.

FACULTY POSITION IN TOXICOLOGY HARVARD SCHOOL OF PUBLIC HEALTH

The Department of Cancer Cell Biology is seeking an ASSISTANT PROFESSOR with interests and accomplishments in the broad area of molecular/genetic mechanisms of cellular injury induced by environmental and endogenous chemicals. The successful candidate will be expected to establish independent research programs that complement the current departmental interests in oxidative stress, DNA damage and repair, genetic recombination, cellular mechanisms of signal transduction, and cell cycle control, and to participate in the department's graduate teaching programs.

Interested candidates should send a curriculum vitae, a statement of research accomplishments and future plans, and the names, addresses, telephone, FAX, and e-mail contacts of three evaluators to:

Bruce Dimple, Ph.D.
Chair, Search Committee
Department of Cancer Cell Biology
Harvard School of Public Health
665 Huntington Avenue, I-609
Boston, MA 02115-6021

Harvard University is committed to increasing the number of women and minorities in its faculty and especially encourages applications from such candidates.

Lorain County Community College, a dynamic comprehensive community college located 25 miles west of Cleveland, Ohio, invites applications from qualified academic professionals for the following full-time administrative position:

DIRECTOR, SCIENCE AND MATHEMATICS DIVISION

Provide leadership for credit/noncredit programs, courses and faculty in the biological/life sciences, chemistry, physics/physical sciences, and mathematics/computer science. A Master's degree plus 30 graduate semester hours in an appropriate discipline(s), college teaching, and demonstrated academic administrative leadership is required; the earned Doctorate and three years of college or university administrative experience are preferred.

Beginning salary range: \$51,563 to \$64,454 for a 12-month contract. The salary is enhanced by a comprehensive fringe benefits package. Applicants should submit a letter of interest, a comprehensive résumé and the names, addresses, and telephone numbers of three work-related references. Additional documentation, required after receipt of the initial material. Official transcripts are required prior to employment. Forward all materials to: Errol M. Browne, Director of Human Resources, Lorain County Community College, 1005 Abbe Road North, Elyria, OH 44035. The screening process will continue until the finalist candidates are selected. An Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

FACULTY POSITION UNIVERSITY OF MICHIGAN Molecular Pathogenesis of Lung Infections

Applicants should have Ph.D. with postdoctoral experience in analysis of mammalian transcription factors and gene regulation. Necessary skills: cloning by homology PCR, EMSA, transient transfections, SSCP, ability to write manuscripts and competitive grant applications; immunology or bioinformatics pluses. VA-funded position with appointment in University of Michigan Department of Internal Medicine in the RESEARCH SCIENTIST track (non-tenure). Includes start-up package, Technician, laboratory space. *Must be U.S. citizen.* Information at website: www.med.umich.edu/intmed/pulmonary/REAP.html. Position closes January 29, 1999. Contact: Jeffrey Curtis, M.D., Pulmonary Section (111G), VA Medical Center, 2215 Fuller Road, Ann Arbor, MI 48105. E-mail: jlc Curtis@umich.edu. The Department of Veterans Affairs is an Equal Opportunity Employer.

The College of Engineering at University of California, Davis invites applications from qualified candidates for two FACULTY POSITIONS in the area of biomedical engineering. Senior candidates should have an outstanding international research reputation in biomedical engineering and a track record of interdisciplinary collaboration. Junior candidates should have outstanding research potential. A Ph.D. degree in biomedical engineering or a related discipline is required. Particular areas of interest include biological and medical imaging, cellular adhesion, and cell mechanics. The College of Engineering is forming a new Division of Biomedical Engineering that is expected to expand significantly over the next few years. Applicants must be able to teach core undergraduate and graduate courses, and be willing to help establish an innovative multidisciplinary curriculum in the field of biomedical engineering.

Interested individuals should forward their résumé, a summary of teaching and research plans, and the names of at least three professional references to: Professor Katherine W. Ferrara, College of Engineering, Dean's Office, University of California, One Shields Avenue, Davis, CA 95616-5294. Website: <http://www.engr.ucdavis.edu>. To ensure consideration, applications should be submitted by January 29, 1999. The positions will remain open until filled. The UC Davis College of Engineering is committed to building a diverse faculty, staff, and student body as it responds to the changing population and educational needs of California and the nation. The University of California is an Affirmative Action/Equal Opportunity Employer.

The University of Wisconsin-Green Bay Chemistry Program invites applications for a LECTURER and SUPERVISOR OF INTRODUCTORY LABORATORIES starting 23 August 1999. Applicants must have at least a Master's degree in chemistry, biochemistry, or closely related field. Duties include lecture and laboratory in a one-semester general chemistry course that includes organic and biochemistry as well as supervision of the laboratories for a full-year course. To apply, submit a letter indicating teaching experience along with current curriculum vitae, undergraduate and graduate transcripts, and three current letters of recommendation to: Dr. Jack Norman, Natural and Applied Sciences, University of Wisconsin-Green Bay, Green Bay, WI 54311-7001. Telephone: 920-465-2371; FAX: 920-465-2376. First screening 1 February 1999. More information at website: http://www.uwgb.edu/~starkeyr/chem_hp.htm. UWGB is an Affirmative Action/Equal Employment Opportunity Employer. Names of applicants may be disclosed unless requested otherwise. Names of finalists will be released.

CLINICAL CHEMIST

The University of Windsor invites applications for a FACULTY POSITION in clinical chemistry (subject to final budgetary approval). Candidates may wish to be considered for DIRECTORSHIP of the Clinical Chemistry Programs. Applicants must be Board-certified, or eligible for certification, in clinical chemistry in both Canada and United States. The successful candidate is expected to develop a vigorous, externally funded research program. Deadline January 28, 1999. Full information and requirements at website: <http://www.uwindsor.ca/jobs/>; FAX: 519-973-7098.

POSITIONS OPEN

NORTHWESTERN UNIVERSITY DEPARTMENT OF PHYSIOLOGY

The Department of Physiology at Northwestern University Medical School announces a search for a new TENURE-TRACK FACULTY MEMBER. The appointment may be made at any level. Outstanding candidates employing innovative cellular or molecular approaches to understanding brain function that expand the existing departmental strengths are encouraged to apply. Successful candidates holding a Ph.D. or M.D. degree are expected to establish an independently funded research program as well as interact with members of the neuroscience community. In addition, participation in graduate and medical student teaching is expected.

This recruitment is part of a growing commitment to neurosciences at Northwestern University Medical School. Additional information about the Department of Physiology and the Northwestern University Institute for Neurosciences can be found on our websites: <http://dept-www.physio.nwu.edu/physiology/physiofr.htm> or <http://nuinfo.nwu.edu/nuin/>.

Please send a curriculum vitae, a description of research interests, and three letters of reference by March 1, 1999, to:

D. James Surmeier, Ph.D.
Chair, Search Committee
Department of Physiology
Northwestern University Medical School
320 East Superior Street
Chicago, IL 60611

We hope to fill this position by September 1, 1999.

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

FACULTY POSITION IN ENVIRONMENTAL PATHOGENIC MICROBIOLOGY

The Department of Botany and Microbiology at the University of Oklahoma invites applications for a tenure-track ASSISTANT PROFESSOR position in the general area of the physiology or genetics of environmentally important, new, or reemerging pathogens. Applicants should take a molecular approach to potential areas of interest such as the introduction, transport, and fate of pathogens in the environment, effect of altered environmental conditions on pathogens, or other microbiologically oriented public health issues. Teaching at the undergraduate and graduate level is expected. Applicants must possess a Doctorate degree in microbiology or related field. Postdoctoral experience required. The department has 20 faculty and cores of excellence in environmental biology in both botany and microbiology. Research and expertise that complements the department's strengths is preferable. Applicants should provide a curriculum vitae, statement of research interests, statement of teaching interests, and three letters of recommendation by 8 January 1999 to ensure full consideration but the search will continue until a candidate is hired. Application materials should be sent to: Microbiologist Search Committee, Department of Botany and Microbiology, University of Oklahoma, 770 Van Fleet Oval, Norman, OK 73019-6131. Information on the department is on our website: <http://www.ou.edu/cas/botany-micro>. The University of Oklahoma is an Affirmative Action/Equal Opportunity Employer. Applications from women and underrepresented minorities are encouraged.

The Department of Pharmacology and Toxicology at the University of Arkansas for Medical Sciences invites applications for a TENURE-TRACK POSITION in the Division of Pharmacology (website: <http://www.uams.edu/pharmtox/pharmtox.htm>). The level of appointment is open. We are particularly interested in candidates with interests in the molecular or cellular aspects of immunopharmacology and autonomic pharmacology, although strong candidates in other areas will be considered. Applicants should be able to develop independent and collaborative research programs and participate in the instruction of medical students and graduate students. Applicants at the Associate Professor or Professor level will be expected to have extramural funding. Applicants should submit a letter of interest in the position, the names of three references, and a curriculum vitae to: Dr. Galen R. Wenger, Director, Division of Pharmacology, Department of Pharmacology and Toxicology, Mail Slot 611, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, AR 72205. The University of Arkansas for Medical Sciences is an Affirmative Action/Equal Opportunity Employer.



MAYO CLINIC POSTDOCTORAL RESEARCH ASSOCIATES

Two positions are available immediately. One involves the molecular characterization of the common fragile sites and is aimed at determining why sequences in these regions are unstable. The second involves the cloning of a putative tumor suppressor gene involved in the development of thyroid cancer. A Ph.D. with strong background in molecular biology is required for both positions. Individuals with expertise in chromatin structure and/or replication are especially needed for the first position. Salary will be determined by the successful candidate's experience. There is also an attractive benefit package. Mayo Clinic is a non-profit physician lead clinical practice integrated with education and research in a unified multi-campus system. Send curriculum vitae and the names of three references to:

David I. Smith, Ph.D.

Director of the Cancer Genetics
Program

Mayo Clinic Cancer Center

200 First Street SW

Rochester, MN 55905

e-mail: smith.david@mayo.edu

*Mayo Foundation is an Affirmative Action and
Equal Opportunity Employer and Educator.*



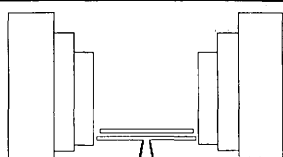
MYLAN DEPARTMENT CHAIR AND PROFESSOR DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE

The School of Medicine of the Robert C. Byrd Health Sciences Center of West Virginia University seeks a Chair of the Department of Pharmacology and Toxicology. WVU, a comprehensive, public, Carnegie Research I University, is the flagship university for the state of West Virginia. WVU is located in Morgantown, a vibrant community in north central West Virginia. Residents of Morgantown enjoy the benefits of living in a city ranked third among most livable small cities in the United States.

Candidates should be a senior scientist with a Ph.D. and/or M.D., a distinguished record of research productivity, the capacity to maintain a robust extramurally-funded research program, and a commitment to professional and graduate education. We welcome applicants from all areas of pharmacology or toxicology, however, it is anticipated that the greatest growth potential exists in enhancing the research mission of the Mary Babb Randolph Cancer Center or the field of neurosciences.

The department is one of five basic science departments in the School of Medicine — all of which have strong research programs. The department has 12 primary faculty members as well as several adjunct and secondary faculty members. The department has a strong record of training Ph.D. students and has had an NIH training grant for over 30 years. Candidates are encouraged to visit the department's web site for additional information about the department at http://www.hsc.wvu.edu/som/pcol_tox/pcoltox.htm. The successful candidate will have the opportunity to guide the department in its role in the implementation of a new medical school curriculum as well as the department's research program.

This search will remain open until filled, however, screening of applications will begin on February 15, 1999. Applicants should submit a curriculum vitae, statements of research interests and administrative philosophy, and the names and addresses of at least three references to: John B. Barnett, Ph.D., Professor and Chair, Department of Microbiology and Immunology, c/o Susan Jackson, School of Medicine, P.O. Box 9000, West Virginia University, Morgantown, WV 26506-9000. *West Virginia University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*



THE SALK INSTITUTE POSTDOCTORAL POSITIONS IN NEURAL DEVELOPMENT AND FUNCTION

Positions are available to study mechanisms controlling neuronal and glial development and function via genetic (gene-targeting and conditional mutations), molecular and cellular approaches. Current interests include signaling pathways mediated by neuregulins and neurotrophins in reciprocal interactions of neurons and glial cells, cell migration and survival, and synapse formation. A doctoral level degree is required and a strong background in signal transduction, cell biology, or neurobiology/neuroanatomy is preferred.

Applicants should send curriculum vitae, statement of research interests and experience, and names of three references to:

Dr. Kuo-Fen Lee

The Salk Institute

10010 N. Torrey Pines Road

La Jolla, CA 92037

e-mail: klee@salk.edu

www.salk.edu

The Salk Institute is an
Equal Opportunity Employer

Chair of the Department of Pharmacology and Neuroscience, and Director of Aging & Alzheimer's Research Institute

The University of North Texas Health Science Center (UNTHSC) at Fort Worth is seeking nominations/applications for the new position. The selected candidate will extend the research leadership of the present Department of Pharmacology with ten faculty and 10,000 sq. ft. of research space. To those will be added several faculty positions in neuroscience along with new research facilities. The present research interests include aging, neuroprotection, behavioral and molecular pharmacology and substance abuse/addiction. The Health Science Center has recently taken a national leadership role in research and treatment of Alzheimer's disease. The UNTHSC Aging & Alzheimer's Research Institute (AARI) oversees provision of care to approximately 2,000 long-term residents, including day care services and community based geriatrics programs. Given the broad scope of both basic research and clinical responsibilities, the possibility for a joint recruitment of a Vice Chair/Associate Director exists. The Chair/Director in collaboration with the Vice Chair/Associate Director will manage and promote academic and scholarly activities of basic and clinical faculty including research into drug discovery for Alzheimer's disease. Candidates should be outstanding scientists with strong commitment to academic excellence in research and teaching and a track record of funding and interest in Alzheimer's disease.

The UNT Health Science Center is a State of Texas institution with state-of-the-art research and teaching facilities. Besides departments in all academic disciplines, the UNTHSC maintains research interests with discovery focus in aging, substance abuse, cardiovascular disease, cancer, eye diseases, forensic toxicology and molecular genetics. The UNTHSC houses the Texas College of Osteopathic Medicine, the Graduate School of Biomedical Sciences, programs in Public Health, and a training program for Physician Assistants. Its 112-member clinical faculty manages a group practice serving 176,000 Fort Worth area residents. The Center is located in the Cultural District of the City of Fort Worth. Fort Worth is an attractive/dynamic city with outstanding recreational and cultural attractions, highly favorable cost-of-living and sunny climate.

Applications and nominations including curriculum vitae, research interests and goals, plus three letters of recommendation should be sent to: **Dr. Ronald H. Goldfarb, Search Committee Chair, Professor and Chairman, Department of Molecular Biology and Immunology, University of North Texas Health Science Center, 3500 Camp Bowie Blvd., Fort Worth, TX 76107-2699. (Phone: 817/735-2006; Fax: 817/735-2651; E-mail: rgoldfar@hsc.unt.edu)**

The University of North Texas Health Science Center at Fort Worth enjoys a smoke-free campus and is an EEO / Affirmative Action Institution.

POSITIONS OPEN

UNIVERSITY OF TORONTO Department of Electrical and Computer Engineering and Institute of Biomaterials and Biomedical Engineering

The Department of Electrical and Computer Engineering and the Institute of Biomaterials and Biomedical Engineering at the University of Toronto invite applications for a joint tenure-track **ASSISTANT PROFESSOR** position. The position involves research and teaching at the undergraduate and graduate levels. The ideal candidate will have an electrical engineering background and a Ph.D. in the field of biomedical engineering.

The University of Toronto attracts outstanding students, and has excellent research facilities in biomedical engineering. The University is ideally located in the middle of a vibrant metropolitan city. Additional information can be found on the following websites: <http://www.ece.toronto.edu> and <http://www.ibme.toronto.edu>.

Applicants should send a curriculum vitae and a list of three references to: **Professor Hans Kunov, Institute of Biomaterials and Biomedical Engineering, University of Toronto, 4 Taddle Creek Road, Toronto, Ontario M5S 3G9 Canada.** The search will continue until the position is filled. To ensure consideration, interested individuals should send application before February 26, 1999.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Toronto is committed to Employment Equity and encourages applications from women, visible minorities, aboriginal people, and physically challenged persons.

OPEN PH.D. FACULTY POSITION ASSISTANT PROFESSOR TENURE TRACK The University of Iowa Department of Obstetrics and Gynecology

The Department of Obstetrics and Gynecology at the University of Iowa College of Medicine invites applications for a Ph.D. faculty position as Assistant Professor, tenure track.

The successful candidate is expected to achieve an outstanding independent research program. Requirements for this position include a Ph.D. in biochemistry, a strong research background in molecular biology, and at least four years of postdoctoral research experience in gene identification, cloning, and analysis. Management experience in directing a gene targeting core facility, success in creating murine models of human diseases, and a commitment to teaching are required.

Please send a copy of your curriculum vitae to:

Dr. Roger Williamson
Department of Obstetrics and Gynecology
University of Iowa Hospitals and Clinics
200 Hawkins Drive
Iowa City, IA 52242

The University of Iowa is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are strongly encouraged to apply.

FACULTY POSITION APPLIED COMMUNITY ECOLOGY

Applications are invited for a tenure-track **ASSISTANT PROFESSOR** in applied community ecology in the School of Environmental Science, Engineering, and Policy at Drexel University. Applicants must be interested in developing a career balancing graduate and undergraduate teaching, research, and service. Applicants should have an earned Doctoral degree in ecology and experience in landscape/geographic processes, biodiversity, and the interaction between the built and natural environment of urban areas. Candidates interested in using molecular approaches to studying urban plant or animal populations are especially encouraged to apply. Further information on our programs can be obtained from website: <http://www.coas.drexel.edu/enviro/>.

Mail or e-mail applications, including statements of teaching interests and research interests, as well as a curriculum vitae to: **Dr. James Spotila, School of Environmental Science, Engineering and Policy, Drexel University, 3141 Chestnut Street, Philadelphia, PA 19104.** E-mail: sesep@dunx1.ocs.drexel.edu. In addition, applicants should arrange for three letters of reference to be sent to **Professor Spotila**. Review will begin January 30, 1999. *Drexel University is an Equal Opportunity/Affirmative Action Employer and encourages applications from qualified women and minorities.*

POSITIONS OPEN

THREE TENURE-TRACK ASSISTANT PROFESSOR POSITIONS—FALL 1999 Department of Biological Sciences St. Cloud State University

Genetics position: Shared teaching responsibilities include introductory biology course for majors, sophomore-level genetics, a recombinant DNA course, and a graduate course in genetics. Required: Ph.D. in genetics or relevant discipline; postdoctoral or equivalent experience.

Immunology-cell biology position: Shared teaching responsibilities include introductory biology, immunology, cell biology, and advanced courses in these areas. Required: Ph.D. in relevant discipline; postdoctoral or equivalent experience.

Plant systematics position: Teach upper-division courses in plant taxonomy, field botany, and wetland plants/communities. Shared teaching responsibilities include non-majors ethnobotany course, introductory diversity course, botany course for majors and graduate-level population course, Curate herbarium. Required: Ph.D. in botany or relevant discipline with specialization in plant systematics; postdoctoral experience or equivalent; training and experience in plant systematics, field botany, and plant population biology.

Preference to candidates with successful postsecondary teaching experience and a strong commitment to teaching (B.S./M.A.) and research programs involving undergraduate and graduate (M.A.) students. Advising and committee participation is expected. Send letter of application including statements of research plans and teaching philosophy, curriculum vitae, transcripts (copies acceptable for initial screening), and the names, telephone numbers, postal and e-mail addresses of three references. We will contact references to comment specifically upon your teaching ability, experience, and professional preparation. Submit materials to: **Chair, Department of Biological Sciences, St. Cloud State University, 720 4th Avenue South, MS-262, St. Cloud, MN 56301-4498.** Telephone: 320-255-4736; FAX: 320-255-4166; e-mail: biology@stcloudstate.edu. All materials must be postmarked by 2 February 1999 to be considered. E-mail or FAX applications received after 2 February 1999 will not be considered. SCSU is an Affirmative Action/Equal Opportunity Educator and Employer. In accordance with INS regulations, successful applicants must be legally able to work in the United States. This material can be given to you in an alternative format such as large Braille, etc., by contacting the department listing this vacancy.

SCSU is committed to excellence and actively supports cultural diversity. To promote this endeavor, we invite individuals who contribute to such diversity to apply, including minorities, women, persons with disability, and veterans.

FACULTY POSITION IN THE DEPARTMENT OF APPLIED PHYSICS STANFORD UNIVERSITY

The Department of Applied Physics at Stanford University intends to make a faculty appointment in the broad area of materials synthesis and study motivated by cutting-edge issues of solid state physics. We are primarily seeking candidates for a tenure-track **ASSISTANT PROFESSORSHIP**; however, outstanding candidates for **ASSOCIATE** and, possibly, **FULL PROFESSORSHIP**s will be considered. Applicants will be expected to pursue a vigorous scientific program and to teach courses at both the graduate and undergraduate levels.

Each applicant should send a curriculum vitae, bibliography, a brief statement of research interests, and names of three references to: **Professor Aharon Kapitulnik, Chair, Department of Applied Physics, 316 Via Pueblo Mall, Stanford University, Stanford, CA 94305.** To receive full consideration, materials should be received by February 15, 1999. The term of appointment can begin September 1, 1999. *Stanford University is an Equal Opportunity/Affirmative Action Employer; women and minority candidates are strongly encouraged to apply.*

The Department of Physics at the University of Illinois at Chicago (UIC) plans to fill one tenure-track **ASSISTANT PROFESSORSHIP** position to begin fall 1999. Our search will give special consideration to candidates in the areas of condensed matter physics and biophysics.

Applicants should submit a curriculum vitae and a statement of research interests and future plans by March 25, 1999. They should also arrange to have three letters of recommendation sent to: **Prof. Inder P. Batra, Head, University of Illinois at Chicago, Department of Physics (MC 273), 845 West Taylor Street, Room 2236, Chicago, IL 60607-7059.** *The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY POSITION IN TOXICOLOGY

The Department of Environmental Health of the College of Veterinary Medicine and Biomedical Sciences at Colorado State University invites applications for a nine-month tenure-track position at the rank of **ASSISTANT** or **ASSOCIATE PROFESSOR**. The successful candidate will establish and/or maintain an independent, extramurally funded program of scholarly research in toxicology, likely utilizing molecular and/or mechanistic approaches. Interest and experience in occupational and environmental exposures to toxic agents is desirable. The candidate will be considered for appointment to the Center for Environmental Toxicology and Technology, one of the University's Programs of Research and Scholarly Excellence. In addition to Toxicology, the Department has broadly interactive research and teaching programs in Epidemiology and Occupational Health. Opportunities for collaboration within the College or University include areas such as carcinogenesis, neurobiology, reproductive and developmental biology, and immunology. The Department of Environmental Health offers a range of courses covering the spectrum of toxicology at both the undergraduate and graduate levels. The successful candidate must have a Ph.D. degree, or equivalent, and the educational background, ability, and interest to allow participation in teaching toxicology at both the introductory and advanced levels. Salary for this position will be commensurate with experience. Please send a current curriculum vitae, names of three references, a list of funded research projects, and a separate statement of career goals and interests in teaching and research to: **Toxicology Search Committee, Department of Environmental Health, Colorado State University, Fort Collins, CO 80523-1676.** Applications received by February 12, 1999, will receive full consideration; however, applications will be considered until the position is filled. *Colorado State University is an Equal Opportunity/Affirmative Action Employer and complies with all Federal and Colorado State laws, regulations, and executive orders regarding Affirmative Action requirements. The Office of Equal Opportunity is located at 101 Student Services. In order to help Colorado State University in meeting its Affirmative Action responsibilities, ethnic minorities, women, and other protected class members are encouraged to apply and to so identify themselves.*

The Department of Veterinary Biosciences, College of Veterinary Medicine, University of Illinois, Urbana-Champaign is seeking applications for one or more positions as full-time, nine-month, tenure-track positions at the **ASSISTANT, ASSOCIATE** or **FULL PROFESSOR** level. Successful candidates will teach gross anatomy in the veterinary medicine curriculum and participate in graduate instruction. The successful candidates will also be expected to develop a research program in reproductive biology, toxicology (basic, environmental, or reproductive), cardiovascular biology, or one of the other research emphasis areas within the College.

Candidates should possess the Ph.D. degree or equivalent. Preference will be given to those who also hold the D.V.M. degree or equivalent or have prior experience teaching comparative gross anatomy. Salary commensurate with qualifications. To ensure full consideration, applications should be received by February 19, 1999. Starting date on or after July 21, 1999.

Send curriculum vitae and three letters of reference to:

Dr. K. R. Holmes
Chair, Anatomy Search Committee
Department of Veterinary Biosciences
University of Illinois
2001 South Lincoln Avenue
Urbana, IL 61802
Telephone: 217-333-2506
FAX: 217-244-1652
E-mail: krholmes@uiuc.edu

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

BIOLOGY

Tusculum College (Greenville, Tennessee) teaches one course at a time (block plan) and seeks **FACULTY** with a demonstrated commitment to teaching excellence. This position (August 1999) is in the preprofessional curriculum with primary courses being microbiology, general physiology, immunology, and genetics. Ph.D. preferred.

Review of applications begins January 11, 1999, and continues until position is filled. Send cover letter, curriculum vitae, and list of references to: **Biology Search Committee, Tusculum College, Box 5093, Greenville, TN 37743.** *Equal Opportunity Employer.*

**Dean, College of Science and
Mathematics
North Dakota State University**

North Dakota State University invites nominations and applications for the position of Dean of the College of Science and Mathematics. The Dean is the chief academic and administrative leader for the college and reports to the Vice President for Academic Affairs.

The College of Science and Mathematics consists of the following departments: Biochemistry, Botany/Biology, Chemistry, Computer Science, Geosciences, Mathematics, Physics, Polymers and Coatings, Psychology, Statistics, and Zoology. The College offers 15 undergraduate degree programs, 11 master's degree programs, and 10 Ph.D. programs with an enrollment of 1290 undergraduate students and 256 graduate students. In the College there are 100 full-time faculty, 12 part-time faculty, and 30 support staff.

North Dakota State is the state's Morrill Act land-grant institution. The university is located on the eastern border of the state in Fargo, North Dakota's largest city. For more information, contact <http://www.ndsu.nodak.edu/scimath/>.

Application Procedures: Nominations and applications will be accepted until the position is filled. Review of applications will begin January 15, 1999. Complete applications, including a letter of application, curriculum vitae, and the names, addresses, phone/FAX and e-mail addresses of five potential references should be sent to: **Dr. Virginia Clark, Chair, Science and Mathematics Dean Search Committee, College of Human Development and Education, P.O. Box 5057, North Dakota State University, Fargo, ND 58105-5057; Phone - 701-231-8211; FAX - 701-231-7174; e-mail: vclark@badlands.nodak.edu. NDSU is an Equal Opportunity Institution.**



**ASSOCIATE
RESEARCH SCIENTISTS**

Oklahoma Medical Research Foundation (OMRF) is a private research institution located adjacent to the University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma. The Foundation has a stimulating research environment with emphasis in basic research in protein structural biology, cardiovascular biology, molecular & cell biology, immunobiology & cancer, free radical biology & aging, arthritis/immunology, and mammalian genetics. OMRF invites applications for the following postdoctoral openings.

Cardiovascular Biology Department — Two NIH-funded postdoctoral positions are available to study the structure and function of coagulation proteases and their inhibitors. The applicants are required to have a Ph.D. in biology, biochemistry, or related field. Experience in molecular biology and/or enzyme kinetics is desired. Send curriculum vitae and three references to: **Ray Rezaie, Ph.D., e-mail: alireza-rezaie@omrf.ouhsc.edu or fax: (405) 271-7417.**

Free Radical Biology & Aging Department — Two postdoctoral positions are available (1) to study long-term effects of excitatory amino acid on the central nervous system, especially to the hippocampus. A Ph.D. in molecular biology or neurobiology and equivalent experience is desirable. (2) To study inflammatory on neuronal cell death, especially on dopaminergic neurons in the substantia nigra. A Ph.D. in Neurobiology and experience in animal models for Neurodegenerative Disease is required. Send curriculum vitae and the names of three references to: **Guoying Bing, M.D., Ph.D., e-mail: guoying-bing@omrf.ouhsc.edu or fax: (405) 271-1795.**

Arthritis/Immunology Department — Two postdoctoral positions are available to pursue the GENETICS OF SYSTEMIC LUPUS ERYTHEMATOSUS. (1) To identify the genes responsible for the 16 putative linkages identified in the nearly 200 multiplex pedigrees available. A Ph.D. in human genetics or equivalent experience is desirable. A statistical geneticist is preferred. (2) To pursue Epstein-Barr virus as an etiology of SYSTEMIC LUPUS ERYTHEMATOSUS. A Ph.D. in virology or immunology or equivalent experience in molecular biology or molecular immunology is desirable. Send curriculum vitae and references to: **John B. Harley, M.D., Ph.D., e-mail: john-harley@omrf.ouhsc.edu, or fax: (405) 271-4110.**

Applicants may send their information to the above scientists at **Oklahoma Medical Research Foundation, 825 N.E. 13th Street, Oklahoma City, OK 73104.** OMRF offers a competitive salary and benefits package. Future graduates are encouraged to apply.
EEO/Affirmative Action Employer.



**St. Jude Children's
Research Hospital**

ALSAC • Danny Thomas, Founder

The Department of Immunology at St. Jude Children's Research Hospital is seeking a molecular biologist with extensive protein expression/purification experience to establish and operate a shared resource laboratory to prepare MHC "tetramer" reagents (Immunity 8:683-691, 1998). Applicants should possess a Ph.D. degree or a Master's degree with relevant experience.

St. Jude Children's Research Hospital is one of the premier pediatric cancer hospitals in the United States and has a large faculty of basic and clinical investigators organized into traditional academic departments. Applicants should send a curriculum vitae and the names of three references to: **William S. Walker, Ph.D., Vice-Chairman, Department of Immunology, St. Jude Children's Research Hospital, 332 N. Lauderdale, Memphis, TN 38105. Alternatively, information may be forwarded by E-mail to: bill.walker@stjude.org. Interested individuals are encouraged to visit www.stjude.org for additional institutional information. St. Jude Children's Research Hospital is an Equal Opportunity/Affirmative Action Employer.**

UNIVERSITY OF PENNSYLVANIA

DEAN, SCHOOL OF ENGINEERING AND APPLIED SCIENCE

The University of Pennsylvania, the nation's first university and Philadelphia's largest private employer, invites nominations and applications for the position of Dean of the School of Engineering and Applied Science. As its chief academic and administrative officer, the dean has overall responsibility for the School's educational and research programs, strategic directions, faculty growth, and development. One of twelve schools within the University, Engineering has seven departments with vibrant interdisciplinary research and educational programs that include interactions with the Institute for Medicine and Engineering, the Institute for Research in Cognitive Science, the Laboratory for Research on the Structure of Matter, and the Institute for Neurological Sciences. The School has both undergraduate and graduate joint programs with Wharton, the School of Nursing, Arts and Sciences, and the Annenberg School for Communication.

Candidates should possess exceptional leadership attributes, and an understanding and appreciation of the role and mission of an interdisciplinary research and teaching institution. He/she must possess a vision for engineering that will enable the school to attract talented faculty and students, and to generate the resources to support research and programmatic initiatives.

The Committee will begin reviewing applications by January 15, 1999 although the search will remain open until the position is filled. To apply, please send a letter discussing your qualifications, along with a current curriculum vitae to:

**Professor Morris A. Cohen, Chair
c/o Office of the Secretary
University of Pennsylvania
121 College Hall
Philadelphia, PA 19104-6382**



The University of Pennsylvania is an Equal Opportunity /Affirmative Action Employer

POSITIONS OPEN

ASSISTANT PROFESSOR IN THE HEALTH SCIENCES

Hampshire College, an innovative interdisciplinary liberal arts institution and member of the Five College Consortium, is accepting applications for a Health Scientist (Assistant Professor), focusing in such areas as epidemiology, public health, or nutrition. We also seek candidates with the ability to teach and advise students in statistics and computer skills.

Hampshire College offers a stimulating and supportive environment for interdisciplinary teaching and collaborative research in a wide variety of fields. We seek scientists whose innovative teaching engages students in genuine research at the introductory and advance levels. We emphasize discussion, projects, and written evaluations rather than lectures, exams, demonstrations, or grades. All Hampshire students are expected to engage in intellectual issues pertinent to the Third World or United States minorities in the course of their education. Improving science teaching and K-12 collaboration are other active areas of interest.

Pending funding, position is for fall 1999. A Ph.D. or the equivalent is required. The candidate's ability to combine undergraduate teaching and research in exciting ways will be weighed more heavily than their specific disciplines. Candidate should briefly discuss their ideas for teaching in their letter of application. We offer a competitive salary and benefits. Review of applications begins February 1, 1999. Send letter of application, curriculum vitae, and three letters of recommendation to:

Ms. Laurie Smith
Health Science Search Secretary
Hampshire College
School of Natural Science
Box 5001
Amherst, MA 01002-5001

E-mail questions to: e-mail: ljms@hampshire.edu.
Visit our website: <http://www.hampshire.edu>.
Affirmative Action/Equal Opportunity Employer.

STRUCTURAL BIOLOGIST

The Biochemistry Department of the University of Nevada, Reno invites applications for a tenure-track position at the ASSISTANT/ASSOCIATE PROFESSOR level. Researchers from all areas of structural biology/physical biochemistry, preferably related to molecular processes underlying human disease, are encouraged to apply. The successful candidate will (1) have a Ph.D. in biochemistry or allied discipline and postdoctoral experience; and (2) be expected to develop an outstanding research program, participate in undergraduate and graduate education, and contribute to development of a growing department.

Candidates should submit a current curriculum vitae, a summary of research experience and future goals, copies of three significant publications, and the names and addresses of at least three references (including e-mail, FAX, and telephone) to:

Faculty Search Committee
c/o Dawn Arnold
Department of Biochemistry/330
University of Nevada
Reno, NV 89557-0014

To receive full consideration, applications must be received for review by January 31, 1999.

The University of Nevada is an Affirmative Action/Equal Employment Opportunity Institution. We encourage applications from minorities and women.

VETERINARY PATHOLOGIST

The University of Chicago seeks to recruit a Veterinary Pathologist at the ASSISTANT or ASSOCIATE PROFESSOR level to provide anatomic pathology support in the Animal Resources Center. Most clinical cases involve murine pathology, but some larger animals are also involved. Significant protected time is available for scholarly activities, and ideally this individual will establish an investigative program involving independent or collaborative research. Candidates should be ACVP Board-certified and have an interest in joining a dynamic group of seven academic Veterinarians and scientists. A staffed histopathology laboratory is available, along with a research laboratory, office space, and research development support will be provided. Contact: Paul Schumacker, Ph.D., Committee on Comparative Medicine and Pathology, University of Chicago, MC1030, 5830 South Maryland Avenue, Chicago, IL 60637. Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

ENTOMOLOGY MOLECULAR ENTOMOLOGIST

Position: Molecular Entomologist. Tenure-track ASSISTANT PROFESSOR.

Responsibilities: Incumbent will establish an innovative research program with useful applications centered on the molecular biology of insects as it relates to plant-pest interactions. Interested individuals must have demonstrated expertise with current molecular tools and approaches useful in insect biology and genetics. Areas of specialization could include insect responses to resistance genes in plants, discovery, and/or mode-of-action of resistance genes, characterization of vulnerable systems in insects, and resistance management, as well as others. This individual is expected to be an active member of a team of Entomologists and other scientists who are committed to studies of plant-pest interactions. The ability to work well with others and a willingness to cooperate and collaborate with scientists in other departments and institutions is essential. The person hired for this position will be expected to actively pursue and secure external funding; evidence of ability to secure such funding is desirable. The incumbent will also teach in the department and develop one or more courses at the graduate level.

Availability: Immediately.

Qualifications: Ph.D. degree in entomology or related science.

Salary: Competitive, commensurate with background and experience.

Application: Applications will be accepted until February 8, 1999, or until a suitable candidate is selected. Submit a letter of application, including a statement of your research and teaching goals and interests, curriculum vitae, academic transcripts, three letters of recommendation, and the names and addresses of additional contacts to:

Dr. Jeff Stuart, Chair Search Committee
Department of Entomology
Purdue University
West Lafayette, IN 47907
Telephone: 765-494-4561
E-mail: jeff_stuart@entm.purdue.edu

ASSOCIATE/FULL PROFESSOR IN CORAL REEF RESEARCH

The Rosenstiel School of Marine and Atmospheric Science at the University of Miami invites applications for a coral reef Research Scientist to head the new National Center for Atlantic and Caribbean Reef Research. The tenure-track position is full-time at the Associate or Full Professor level. The successful applicant will be expected to have a strong record of extramural research support, a demonstrated teaching ability at the graduate level, and experience in the management of research programs. As Center Director, the successful applicant will be expected to develop an interdisciplinary research program in coral reef biology, ecology, or geology/geochemistry that can attract extramural funding. Rank, salary, and benefits are negotiable. Applicants should submit a curriculum vitae, a concise statement of interests and accomplishments in research, teaching, and program management, selected reprints, and the names, addresses, telephone numbers, and e-mail addresses for five external referees. Completed applications should be sent to: **Dr. Peter W. Glynn, Search Committee Chair, Rosenstiel School of Marine and Atmospheric Science, 4600 Rickenbacker Causeway, Miami, FL 33149-1098.** The application deadline is February 15, 1999.

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

ASSISTANT PROFESSOR

Department of Biology, Seton Hall University, invites applications for a tenure-track position at the Assistant Professor level for fall 1999. Applicants must have a Ph.D. and relevant postdoctoral experience.

Responsibilities include teaching undergraduate courses, M.S.-level courses in your specialty, teaching in the interdisciplinary University Honors Program, and establishing an independent research laboratory. Send curriculum vitae, description of research interests, and three references on or before January 15, 1999, to:

Office of the Provost
Attn: Faculty Positions
Seton Hall University
400 South Orange Avenue
South Orange, NJ 07079

Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR QUANTITATIVE NEUROSCIENCE

As part of an initiative to establish a Center for Quantitative Biology at Ohio University, the Departments of Biological Sciences, Mathematics, and Physics and Astronomy jointly invite applications for an Assistant Professor position in quantitative neuroscience. Applicants must have a Ph.D. in an appropriate discipline and a strong research record. Preference will be given to applicants with significant postdoctoral training. Prior experience in an interdisciplinary environment and evidence of effective interdisciplinary communication skills are essential. The successful candidate will be appointed in one of the three aforementioned departments, depending on his or her academic background, and will participate in an established interdisciplinary neuroscience program involving faculty from all three departments. He or she will also be expected to contribute to the ongoing development of interdisciplinary education and graduate training in the appropriate department. Competitive salary and research start-up funds are provided along with excellent benefits. Additional information about the Neuroscience Program and the participating departments can be obtained through the University's website: <http://www.ohiou.edu>.

Applicants should provide a curriculum vitae, including a statement of research, and arrange to have three letters of reference sent to:

Dr. Michael H. Rowe, Chair
Neuroscience Search Committee
Department of Biological Sciences
Ohio University
Athens, OH 45701

Review of applications will begin February 15, 1999.
Ohio University is an Equal Opportunity/Affirmative Action Employer.

MARINE BIOCHEMIST UNIVERSITY OF DELAWARE Graduate College of Marine Studies

The Graduate College of Marine Studies (CMS) at the University of Delaware invites applications for a tenure-track ASSISTANT PROFESSOR position in marine biochemistry. The successful candidate will be expected to develop an innovative externally funded research program focusing on biochemical processes involving marine organisms and to contribute to graduate education through teaching and advisement of students. We are especially seeking candidates who can interface with others at CMS and with faculty in other academic units. We anticipate that the candidate will start in the fall semester of 1999. Interested individuals should send a curriculum vitae, a statement of research and teaching interests, and the name, address, telephone, FAX, and e-mail contacts for at least three references to: **John L. Gallagher, Graduate College of Marine Studies, University of Delaware, 700 Pilottown Road, Lewes, DE 19958-1298.** Applications will be accepted until 15 February 1999. Information about CMS can be found at website: <http://www.ocean.udel.edu>.

The University of Delaware is an Equal Opportunity Employer and encourages applications from minority group members and women.

ASSISTANT/ASSOCIATE PROFESSOR DEPARTMENT OF ANATOMY AND CELL BIOLOGY University of Florida College of Medicine

The Department of Anatomy and Cell Biology at the University of Florida College of Medicine invites applications for a tenure-track position at the Assistant or Associate Professor level beginning on or after May 1, 1999. Applicants should have a Ph.D. and/or M.D. degree. The successful candidate will conduct independent research in molecular, cell, or developmental biology and participate in the training of medical and graduate students. Candidates, whose research has significant impact in the area of cancer cell biology, will have the option to join the faculty of the University of Florida Cancer Center. The position offers a competitive salary and start-up package. Applicants should send their curriculum vitae, a brief description of research interests, and three letters of recommendation by February 28, 1999, to: **Christopher M. West, Ph.D., Chairman, Search Committee, P.O. Box 100235, Gainesville, FL 32610-0235. FAX: 352-392-3305; e-mail: westcm@anatomy.med.ufl.edu.**

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

RESEARCH SUPPORT SOUTH POLE SCIENCE COORDINATOR

This position is responsible for planning and coordinating support for all science projects at the South Pole Station. The station supports scientists, funded by the National Science Foundation and other agencies, studying astronomy, aeronomy, glaciology, and seismology in a variety of observatories and laboratories. From March through September, the pre-season planning phase is conducted in Englewood, Colorado. Required deployment to South Pole runs from approximately October through mid-February.

Pre-season planning activities include interfacing with all science groups regarding their support and population requirements, recruiting and hiring science staff, budgeting, organizing science meetings, and coordinating with other South Pole support groups. At the South Pole, this position will work closely with all incoming science groups to coordinate all support to ensure a successful field season.

A Bachelor's degree in Physics, Astronomy or Engineering, or equivalent career experience, and project management are required. Must have excellent communication and writing skills. Familiarity with academic research environments and supervisory experience is highly desirable. Proof of U.S. citizenship is required. All applicants must be able to pass strict physical and dental exams.

For consideration, please e-mail or fax resumes with letter of introduction no later than February 15, 1999 to:



Antarctic Support Associates
Attn: SJ/MM
61 Inverness Drive East
Suite 300
Englewood, CO 80112
Fax: (303) 662-8770
E-mail: resume@asa.org

EOE

INTERDISCIPLINARY

The National Institute on Deafness and Other Communication Disorders (NIDCD), located in Rockville, Maryland, is recruiting for an Interdisciplinary position in the Division of Human Communication. Areas of special interest include: biology, microbiology, genetics, and/or health science administrator. The incumbent will formulate and supervise a comprehensive program of grant and contract research support. Actively participates in the evaluation of ongoing research in molecular genetics and molecular biology of hearing and hearing disorders. Contributes to the overall analysis and administration of this program and provides scientific expertise in the general field of the hearing sciences and serves as a source of technical knowledge in this area.

This is a Civil Service position at the GS-14 level, with a salary range of \$68,570 to \$89,142 per year including locality pay. Also, a recruitment bonus of up to 25% may be available to a non-Federal applicant selected for this position, subject to individual approval. A relocation bonus of up to 25% may be available to a permanent Federal employee who must relocate to accept this position, subject to individual approval. Alternatively, applicants may be eligible for appointment in the Commission Corps of the U.S. Public Health Service. U.S. citizenship is required.

Further information about the position and qualification requirements may be obtained from <http://helix.nih.gov:8001/jobs> or by contacting Ms. Jennings at (301) 402-0508 (voice) or TTY (301) 402-1134. Applicants are required to submit a Curriculum Vitae, Application for Federal Employment (SF-171), Optional Application for Federal Employment (OF-612), Resume, or any other written format to:

Ms. Patricia Jennings, NIDCD Personnel Office
31 Center Drive, Building 31, Room 3C-11, MSC 2320
Bethesda, MD 20892-2320

Applications must be postmarked by **February 1, 1999**. Please annotate announcement number DC-98-0012 on application.

National Institutes of Health
Department of Health and Human Services
NIH IS AN EQUAL OPPORTUNITY EMPLOYER



St. Jude Children's Research Hospital

ALSAC • Danny Thomas, Founder

The Department of Immunology at St. Jude Children's Research Hospital is announcing four faculty positions at either the Assistant, Associate or Full Member level. Applications will be considered from those interested in all areas of immunology. Existing research activities include programs in viral immunity (P.C. Doherty, J.L. Hurwitz, C. Coleclough), genetic immunodeficiencies (M.E. Conley), macrophage development (W.S. Walker), and T cell function (D.A.A. Vignali). Candidates must possess a Ph.D and/or M.D. degree, and have a record of research productivity and extramural support consistent with rank of appointment.

Attractive recruitment packages are available including competitive salaries, generous start up funds and laboratory space in the department, which is located within the basic research laboratories of the institution. Available in the department is a state-of-the-art flow cytometric and cell sorting facility, and a MHC tetramer laboratory is currently under development. A feature of the institution is the outstanding and affordable core research facilities, including Tissue Processing, Cell Microinjection, Cytogenetics, Transgenic/Gene Knockout, Bioinformatics/DNA Chemistry/Protein Chemistry, and SPF animal facility.

St. Jude Children's Research Hospital is one of the premier pediatric cancer hospitals in the United States and has a large faculty of basic and clinical investigators organized into traditional academic departments, including Biochemistry, Tumor Cell Biology, Virology and Molecular Biology, Developmental Neurobiology, Genetics, Structural Biology and Molecular Pharmacology. Strong interdepartmental basic and clinical programs exist in Molecular Oncogenesis, Signal Transduction, Developmental Neurobiology/Neuro-oncology, Hematologic Malignancies, Pediatric Solid Tumors, Cell and Gene Therapy, and Molecular Therapeutics.

Applicants should send a curriculum vitae and the names of three references to: Chairman, Immunology Faculty Search Committee, Department of Immunology, St. Jude Children's Research Hospital, 332 N. Lauderdale, Memphis, TN 38105. Interested individuals are encouraged to visit www.stjude.org for additional institutional information. St. Jude Children's Research Hospital is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

BIOCHEMISTRY

The Department of Biochemistry at the University of Alberta invites applications for one faculty position preferably at the **ASSISTANT PROFESSOR** level (salary range \$40,638 to \$57,510). The position is an entry into the regular academic progression of the university. The successful candidate is expected to secure extramural funding to support a high-quality research program in an area that complements existing strengths of the department. We are particularly interested in candidates in the area of structural biology who use NMR as a major research tool. Excellent NMR facilities exist associated with the MRC Group in Protein Structure and Function, Protein Engineering Network of Centers of Excellence, and Canadian National High Field NMR Center (800 MHz NMR) housed at the University of Alberta (see website: www.biochem.ualberta.ca/). We offer an outstanding research environment and graduate training program. An attractive start-up package including three years of initial salary support, will be provided. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. If suitable Canadian citizens and permanent residents cannot be found, other individuals will be considered.* Individuals with a Ph.D. or equivalent and appropriate postdoctoral experience should send a letter of application, curriculum vitae, brief description of research plans, and arrange to have three letters of reference sent to: **Dr. B. D. Sykes, Acting Chair, Department of Biochemistry, University of Alberta, Edmonton, Alberta T6G 2H7 Canada.** The application deadline is January 31, 1999. *The University of Alberta is committed to the principle of Equity in Employment. As an employer, we welcome diversity in the workplace and encourage applications from all qualified women and men, including Aboriginal peoples, persons with disability, and members of visible minorities.*

ASSISTANT/ASSOCIATE PROFESSOR BIOCHEMISTRY AND MOLECULAR BIOLOGY

The Basic Science Department of Western University of Health Sciences invites applications for this 12-month tenure-track (five-year review) faculty position in biochemistry. Candidates must hold a Ph.D.; an emphasis in molecular biology desirable. The selected candidate will teach in the curriculum for osteopathic medical students and pharmacy students; possess an ability to communicate clearly and effectively; be committed to working in a multicultural environment that fosters diversity; and possess interpersonal skills necessary to interact effectively with other faculty, students, staff, and external constituencies.

Applicants should submit a curriculum vitae, detailing teaching experiences; research interests and accomplishments, including a publication list and future research plans; along with three letters of reference to: **Dr. Jimmie L. Hicks, Search Committee Chair, Western University of Health Sciences, 309 East/Second Street, Pomona, CA 91766-1854.** Review of applications will begin immediately and continue until the position is filled.

Western University of Health Sciences is an Equal Opportunity/Affirmative Action Employer and seeks applications from women and minorities.

ASSISTANT PROFESSOR PLANT BIOLOGY

The Department of Plant Biology at Arizona State University invites applications for a tenure-track faculty position at the Assistant Professor level. Preference will be given to candidates applying imaginative molecular genetic approaches to solve fundamental questions at the organismal level. This can relate to structural, functional, or developmental issues and should complement existing strengths in the department. The successful candidate will be expected to develop a vigorous extramurally funded research program and contribute to teaching at the undergraduate and graduate level. Applicants must have a Ph.D., postdoctoral experience with evidence of research productivity, and excellent communication skills. Information about the department and this position can be found at website: <http://lsvl.asu.edu/plantbiology/>. Applicants must send a curriculum vitae, statement of research interests and teaching philosophy, and the names, addresses, and e-mail addresses (if possible) of four referees to: **Chair, Molecular Genetics Search Committee, Department of Plant Biology, Arizona State University, Box 871601, Tempe, AZ 85287-1601** before January 22, 1999. *Arizona State University is an Equal Opportunity/Affirmative Action/Title IX Employer.*

POSITIONS OPEN

POPULATION GENETICIST

The Department of Biology and Wildlife and Institute of Arctic Biology at the University of Alaska (UA) Fairbanks seek a qualified candidate for a tenure-track **ASSISTANT PROFESSOR** in population genetics (available 15 August 1999).

The successful candidate will be expected to establish a vigorous research program complementing departmental strengths in molecular evolution, systematics, population biology, quantitative biology, and wildlife ecology. This individual could exploit numerous research opportunities in Alaska including collaborations with state and federal agencies to address conservation issues in pristine and modified environments. Available facilities (website: <http://mercury.bio.uaf.edu>) include core DNA laboratory, spatial ecology laboratory, supercomputer, large collections of frozen tissues at the UA Museum, and a modern greenhouse. Applicants should be able to apply molecular methods to problems of variation within and among populations.

The teaching component (two courses per year) includes undergraduate and graduate courses in the areas of genetics, population genetics, conservation biology, or evolution.

Applicants must have a Ph.D. in biology or related field (postdoctoral experience preferred). For full consideration, materials must be received by 8 February 1999. Send complete curriculum vitae, statement of research and teaching interests, reprints, and three letters of reference to: **Joe Cook, Chair, Population Genetics Search, Department of Biology and Wildlife, University of Alaska Fairbanks, Fairbanks, AK 99775-6100.** E-mail: ffjac@uaf.edu; Telephone: 907-474-6946; FAX: 907-474-6716. *Women and minorities are encouraged to apply. The University of Alaska is an Equal Opportunity/Affirmative Action Employer and Educational Institution.*

FACULTY POSITION VETERINARY-SCIENTIST

The Committee on Comparative Medicine and Pathology (CCMP) invites applications for two faculty positions at the level of **ASSISTANT** or **ASSOCIATE PROFESSOR**. The CCMP is an academic unit with clinical responsibility for the Animal Resources Center, teaching responsibilities, and existing research programs in respiratory cell biology, immunology, and experimental pathobiology. Applicants should hold a D.V.M. and/or Ph.D. degree, have significant postdoctoral research experience, and have research interest in, cell biology, experimental pathology, or immunology compatible with the comparative medicine focus of the group. This individual would be expected to develop an independent laboratory research program, and to participate in teaching of graduate students and/or Postdoctoral Fellows. A limited clinical role in the Animal Resources Center for a D.V.M. candidate could be considered. Send a curriculum vitae statement of research interests and three letters of reference to: **Paul Schumacker, Ph.D., Chairman, Committee on Comparative Medicine and Pathology, MC1030, The University of Chicago, 5841 South Maryland Avenue, Chicago, IL 60637.** *The University of Chicago is an Equal Opportunity Employer.*

Tenure-track faculty position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level in the Department of Biomedical Sciences of the Ohio University College of Osteopathic Medicine. Primary responsibilities are to teach organ system physiology in a clinically oriented, innovative medical curriculum and to develop an externally fundable research program. Priority will be given to individuals whose expertise relates to some aspect of renal or endocrine physiology and who will be able to interact effectively with colleagues in the area of molecular biology. A Ph.D. (or equivalent) and appropriate postdoctoral training or experience is required. The appointment is to begin in the fall of 1999. The 11-month salary will be commensurate with experience, and is accompanied by an excellent benefits package. Review of applications will begin February 15, 1999, but applications may be tendered until the position is filled. Submit a statement of career interests, a curriculum vitae, representative reprints, and three (3) letters of recommendation to: **John N. Howell, Ph.D., Search Committee Chair, Department of Biomedical Sciences, Ohio University College of Osteopathic Medicine, 304 Grosvenor Hall, Athens, OH 45701.** E-mail: howell@ohiou.edu.

Ohio University is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

THE UNIVERSITY OF TEXAS AT SAN ANTONIO Division of Earth and Physical Sciences Environmental Sciences

Applications are invited for a tenure-track position as **ASSISTANT PROFESSOR** in an interdisciplinary graduate program in environmental sciences. Practical experience in an environmentally related field and teaching in the university environment is preferred. A Ph.D. in an environmentally related engineering or scientific discipline is required by August 31, 1999. The University has a multicampus environment. Candidates will be expected to prepare and teach courses at both the graduate and undergraduate level in the areas of geographical information systems and decision support systems. Candidates will be expected to develop a well-funded research program in the same areas.

The position has a starting date of September 1, 1999, pending budget approval. Letter of application and supporting materials must be received with a postmark date of no later than February 1, 1999. *Applicants who are not current U.S. citizens must state their current visa or residency status.* Submit original signed letter of application, current curriculum vitae, and three current letters of recommendation to: **Chair, Environmental Sciences Search Committee, Division of Earth and Physical Sciences, The University of Texas at San Antonio, 6900 North Loop 1604 West, San Antonio, TX 78249-0663.** *The University of Texas at San Antonio is an Affirmative Action/Equal Employment Opportunity Employer. Women and minorities are encouraged to apply.*

MARINE ENVIRONMENTAL CHEMIST. Tenure-track **ASSISTANT PROFESSOR** to begin fall 1999; Ph.D. required. Applicants should be strongly committed to teaching and student-faculty research at the undergraduate level; lead our marine chemistry track in the marine science major. Teaching responsibilities: chemical and physical oceanography and possibly introductory oceanography, environmental chemistry, general chemistry, or a course in the area of specialty such as biological-chemical interactions, chemical tracers, organic geochemistry, nutrient and trace metal dynamics, environmental chemistry, or toxicology. Periodic participation in the interdisciplinary, values-oriented general education program. Send a letter discussing teaching and research interests, and goals in working with undergraduates, curriculum vitae, teaching evaluations (if available), undergraduate and graduate transcripts, and three letters of recommendation by February 15, 1999, to: **Dr. William A. Szelistowski, Department of Marine Science, Eckerd College, 4200 54th Avenue South, St. Petersburg, FL 33711.** *Women and minorities are encouraged to apply. Equal Opportunity Employer.*

Biology. Ashland University seeks **PHYSIOLOGICAL ECOLOGIST.** Tenure-track **ASSISTANT PROFESSOR.** Ph.D. required; postdoctoral experience preferred. Should have strong commitment and experience in undergraduate teaching and a research program suitable for undergraduates (research interests in the environmental area preferred). Ability to teach courses in area of specialization as well as courses in human anatomy and physiology, and introductory courses for both majors and non-majors. Opportunities exist for participation in environmental science and toxicology programs. Send application letter, curriculum vitae, transcripts, and three letters of recommendation to: **Chair, Physiology Search Committee, Department of Biology/Toxicology, Ashland University, Ashland, OH 44805.** Review of applications will begin January 29, 1999. Website: www.ashland.edu. *Affirmative Action/Equal Opportunity Employer.*

The Department of Biology, Northeast Louisiana University seeks a **GENETICIST** to fill a tenure-track **ASSISTANT PROFESSOR** position beginning fall 1999. Teaching responsibilities include genetics with laboratory, introductory biology, population genetics, and evolution. Active research involving undergraduate and Master's students is expected. Ph.D. required and postdoctoral experience desirable. Submit curriculum vitae, statement of teaching and research interests, copies of key publications, and addresses, including e-mail, and telephone numbers of three references by January 21, 1999, to: **Geneticist Search, Department of Biology, Northeast Louisiana University, Monroe, LA 71209-0520.** More detailed information is available at website: www.nlu.edu/biology/. *NLU is an Affirmative Action/Equal Employment Opportunity Employer.*

STAFF SCIENTIST POSITION

The Occupational Epidemiology Branch, Epidemiology Biostatistics Program, Division of Cancer Epidemiology and Genetics, National Cancer Institute, National Institutes of Health seeks applicants for a Staff Scientist position. This position is a nontenured limited appointment with an initial appointment of up to five years, and is renewable based on the discretion of the Institute. This position requires working under the general direction of a Senior Epidemiologist and is responsible for coordinating a case-control study of bladder cancer. To qualify, applicants must have a medical degree and a Ph.D. in epidemiology with experience in conducting epidemiologic investigations involving the collection of biological tissues and publications on case-control studies of cancer. The salary range is \$55,969 to \$90,426. To apply for this position, please submit a curriculum vitae, three letters of reference, description of experience in conducting epidemiologic studies with collection of biologic tissue, and examples of publications on case-control studies of cancer. To apply for this position, applicants must submit their applications by January 8, 1999, to **Ms. Judy Schwadron, National Cancer Institute, Division of Cancer Epidemiology and Genetics, 6130 Executive Boulevard, Suite 316, Rockville, MD 20852.**

NIH IS AN EQUAL EMPLOYMENT
OPPORTUNITY EMPLOYER.

POSTDOCTORAL OPPORTUNITY

Molecular and
Cellular Biology
University of
California, Davis

A Postdoctoral position is available to explore the roles of Toll and Toll-like Receptors and their ligands in morphogenesis during *C. elegans* development. A PhD and experience in Molecular Biology are essential; 2 years experience with *C. elegans* is desirable.

The position is fully funded for 2 years and offers a competitive salary. For more information, email lsrose@ucdavis.edu. To apply, please send curriculum vitae and the names, phone numbers and addresses of 3 references to: Dr. Lesilee S. Rose, Section of Molecular and Cellular Biology, One Shields Ave., University of California, Davis, CA 95616. EOE.

Roche

Roche
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Who we are

With the merger of Roche and Boehringer Mannheim, two of the most experienced innovators in diagnostics, an even greater global company has evolved. Today, Roche Diagnostics is known worldwide as a leader in the development, manufacture and marketing of analytical systems and in vitro diagnostics for hospitals, clinical laboratories, physicians and consumer markets.

The position

In this current opportunity with our Biochemicals Division, you will use your scientific knowledge to support our customers and grow an exciting career with one of the most reputable companies in the world. You will be responsible for providing technical support to our external and internal customers.

Who you are

Your credentials include a Bachelor's degree in Biochemistry or other life science. A Master's degree or Ph.D. would be helpful. Your computer literacy and strong written communication and scientific problem solving skills are a must for this position.

Who to contact

We offer an excellent compensation and benefit program including 401(k). Qualified candidates should send a resume, including salary requirements to: **Roche Diagnostics, HR-Dept. 480368, 9115 Hague Road, P.O. Box 50457, Indianapolis, IN 46250-0457.** Principals only, please. Roche is committed to providing equal opportunity to a diverse workforce.

www.roche.com

Associate Director, Interfacial and Processing Sciences William R. Wiley Environmental Molecular Sciences Laboratory

Pacific Northwest National Laboratory (PNNL) is seeking an outstanding scientific leader to serve as Associate Director of Interfacial and Processing Sciences, within the William R. Wiley Environmental Molecular Sciences Laboratory (EMSL). The EMSL is a new facility within the Department of Energy user facility network that is managed by PNNL and is directed by the Office of Biological and Environmental Research, and whose mission is to promote and enable a wide range of collaborative research in the environmental molecular sciences. The position provides administrative and scientific leadership for an organizational group containing approximately 45 scientists focused on surface science, materials, sensors, and waste processing research and a large complement of advanced instrumentation to be used for in-house and collaborative research. Capabilities include laboratories for sensor development, materials synthesis, and reaction engineering; a wide range of UHV surface-sensitive spectroscopies and microscopies; a molecular beam epitaxy laboratory; and an accelerator for Rutherford back scattering and other applications.

Candidates should have a Ph.D. in the physical or engineering sciences with expertise in surface science, materials, or advanced processing and at least 10 years of experience in the performance of externally funded research of high caliber. Candidates should also have significant experience in managing complex, multidisciplinary research projects, senior scientific staff, and laboratory facilities. Experience within the DOE National Laboratory or User Facility Systems, or with DOE basic and applied research programs is valued but not required.

The Associate Director is responsible for administering staff and user facility, developing programs and a collaborative base, and performing research. The Associate Director is part of the senior management team of EMSL and the PNNL research division, Environmental and Health Sciences Division, in which it resides.

The Pacific Northwest National Laboratory is one of nine U.S. Department of Energy multiprogram research laboratories. It is operated for DOE by Battelle Memorial Institute. PNNL is located in southeastern Washington State in the city of Richland. Richland's location on the banks of the Columbia River between the Cascade and Blue Mountains combines the advantage of small-town living with a wide variety of outdoor recreational activities.

For confidential consideration, interested individuals should send a scannable résumé or curriculum vitae to: **Pat Lamberson, Pacific Northwest National Laboratory, P.O. Box 999, MS K9-21, Richland, WA 99352; or E-mail to pat.lamberson@pnl.gov or Fax to (509) 375-6838.** Pacific Northwest National Laboratory is an Affirmative Action / Equal Opportunity Employer and supports diversity in the workplace. Minorities, women, Vietnam-era veterans, and the disabled are encouraged to apply.

<http://www.pnl.gov>

POSITIONS OPEN

TENURE-TRACK ASSISTANT PROFESSOR VANDERBILT UNIVERSITY MEDICAL CENTER

As part of an expansion of the signal transduction program in the Department of Molecular Physiology and Biophysics at the Vanderbilt University School of Medicine, we invite applications for a tenure-track faculty position at the Assistant Professor level. Preference will be given to candidates who address fundamental questions on cell signaling in mammalian cells, and whose interests complement those of existing programs (visit our website: <http://www.mc.vanderbilt.edu/vumcdept/mpb/>).

Interested applicants should forward a curriculum vitae, a short summary of research plans, and three letters of recommendation by March 1, 1999, to:

Search Committee (c/o Roland Stein, Head)
Department of Molecular Physiology and Biophysics
Vanderbilt University School of Medicine
708 Light Hall
Nashville, TN 37232

Vanderbilt University is an Affirmative Action/Equal Opportunity Employer committed to increasing the representation of women and minority groups on its faculty.

FACULTY POSITION IN THE DEPARTMENT OF APPLIED PHYSICS STANFORD UNIVERSITY

The Department of Applied Physics at Stanford University intends to make a faculty appointment in the general area of quantum electronics, lasers, and optics. We are primarily seeking candidates for a tenure-track ASSISTANT PROFESSORSHIP; however, outstanding candidates for ASSOCIATE and, possibly, FULL PROFESSORSHIPS will be considered. Applicants will be expected to teach courses at both the graduate and undergraduate levels.

Applicants should send curriculum vitae, bibliography, a brief statement of research interests, and names of three references to: Professor Aharon Kapitulnik, Chair, Department of Applied Physics, 316 Via Pueblo Mall, Stanford University, Stanford, CA 94305-4090. To receive full consideration, materials should be received by February 15, 1999. The term of appointment would begin September 1, 1999. *Stanford University is an Equal Opportunity/Affirmative Action Employer; women and minority candidates are encouraged to apply.*

ASSISTANT/ASSOCIATE PROFESSOR OF BIOCHEMISTRY

The Morehouse School of Medicine seeks an excellent and experienced Teacher and Researcher for the biochemistry program. Rank will be based on background and experience. The successful candidate will teach in the team-taught medical biochemistry course for first-year medical students. Preference will be given to individuals whose research complements areas of current investigation, which includes neurosciences, cardiovascular, space biology, cancer, infectious disease/HIV, and disorders that disproportionately affect minority populations. Send a letter of interest describing teaching experience and a summary of research plans and interests, curriculum vitae, and names and addresses of three references to: Dr. Martha L. Elks, M.D., Ph.D., Associate Dean for Educational Affairs, Morehouse School of Medicine, 720 Westview Drive S.W., Atlanta, GA 30310-1495. Anticipated appointment July 1, 1999. *Morehouse School of Medicine is an Equal Opportunity Employer and women and minorities are especially encouraged to apply.*

The Department of Surgery, University of Florida College of Medicine is seeking a qualified Ph.D. or M.D.-Ph.D. candidate at the academic rank of ASSOCIATE or FULL PROFESSOR of surgery who conducts translational research in solid organ transplantation and/or transplantation immunology. The successful candidate will be a full-time Research Scientist with a history of independent peer-reviewed funding. Strong interaction with clinical and basic science faculty is desirable. The goal is development of training and research programs within the Division of Transplantation, the seventh largest solid organ transplant program in the country.

Applicants should submit a curriculum vitae and cover letter outlining their research interests to: Dr. Lyle L. Moldawer, Department of Surgery, P.O. Box 100286, University of Florida College of Medicine, Gainesville, FL 32610. Applications deadline is February 1, 1999. Beginning date: July 1, 1999.

Equal Employment Opportunity/Affirmative Action Employer.

POSITIONS OPEN

MICROBIOLOGIST UNITED STATES ARMY DENTAL RESEARCH DETACHMENT

The United States Army Dental Research Detachment (USADRD), located on the Great Lakes Naval Training Center in Great Lakes, Illinois, seeks a Microbiologist to serve as a PRINCIPAL INVESTIGATOR in the civilian grade of GS-13. The USADRD Microbiology Branch is involved in investigating the molecular basis of oral pathogenesis, the identification and development of novel antimicrobial compounds, and the production of antiplaque agents for use in military rations. Applicants must hold a Ph.D. or equivalent, and possess knowledge and interests broad enough to easily integrate with Investigators or different disciplines in support of various research objectives.

The Microbiologist will (1) develop a strong independent research program; (2) work with an interdisciplinary group of colleagues on multiple research initiatives; (3) provide microbiologic support to Investigator research protocols; and (4) participate in expanding existing research protocols. Strong molecular biology and microbiology skills are highly recommended. *Selection for this position is contingent upon proof of U.S. citizenship.* Salary is \$56,981 to \$87,733 per annum (incorporates GS-13 Step 01 to GS-14 Step 10).

To apply for this position, contact: Ellen Bromfield, Northeast CPOC, 314 Johnson Road, P.O. Box 6000, Attn: RESUMIX Project Office, Room 139, Aberdeen Proving Ground, MD 21005-6000. Telephone: 301-619-3367. Job Opportunity Announcement: BB992390.

The United States Army Dental Research Detachment is an Equal Opportunity Employer.

ASSISTANT PROFESSOR. Tenure-track (Ph.D.) beginning August 1999 contingent upon funding. More information about the department/position, website: <http://www.wiu.edu/users/mibiol/>. **GENETICIST** to teach introductory genetics, a molecular biology laboratory course, a graduate molecular course, general biology, and a course(s) in area of expertise. This person must utilize modern molecular genetic techniques in both teaching and organismally oriented research. Applicant will direct M.S. candidates and must demonstrate successful teaching at the undergraduate level. Deadline for applications: January 29, 1999. Send transcripts, curriculum vitae, publications, statement of teaching/research interests, and three references letters to: Dr. L. M. O'Flaherty, Chair of Biological Sciences, Western Illinois University, 1 University Circle, Macomb, IL 61455-1390. FAX: 309-298-2270; e-mail: lmoflaherty@wju.edu. *Western Illinois University is an Affirmative Action/Equal Opportunity Employer.*

The Department of Surgery at the University of Vermont is seeking a DIRECTOR of urologic research who has completed a Ph.D. in the field of medical science. The position will require a strong knowledge base of clinical urologic surgery. Duties will include the establishment of a formal urologic research entity in both the basic and clinical areas of research, teaching, and involvement of students and residents in research. This is a full-time, research-track appointment at the level of Assistant Professor with competitive salary offered. Send curriculum vitae to: Dr. Mark Plante, Section of Urology, 371 Pearl Street, Burlington, VT 05401. Applications will be accepted until January 15, 1999. *An Equal Opportunity/Affirmative Action Employer. Applications from women and people of diverse racial, ethnic, and cultural backgrounds are encouraged.*

ASSISTANT/ASSOCIATE PROFESSOR. Department of Biological Sciences at Arkansas State University (website: www.csm.astate.edu/~biology/biology.html) seeks applications for a tenure-track position in aquatic biology. Successful candidates will develop a graduate and undergraduate teaching and research program and contribute to the Ph.D. program in environmental sciences. Starting date, August 1999. Send statement of teaching and research interests, curriculum vitae, copies of transcripts, and names and addresses of three references to: Dr. Jerry L. Farris, Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467. Review begins January 15, 1999. *An Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

EXECUTIVE DIRECTOR OCEAN RESEARCH AND EDUCATION OCEANOGRAPHY

Consortium for Oceanographic Research
and Education
Washington, D.C.

Oceanography. Position: Executive Director, Ocean Research and Education. The Consortium for Oceanographic Research and Education (CORE) is seeking a highly qualified scientist, with established scientific leadership and management skills, to fill the vacancy of Executive Director, Ocean Research and Education. This position focuses on advancing the national ocean science effort and improving scientific, technical, and educational linkages between academic institutions, federal agencies, and marine technology industries. Reporting to the CORE President, the Executive Director is responsible for planning and managing a wide range of activities promoting ocean science and education. The Executive Director also serves as Director, National Oceanographic Partnership Program Office (NOPP).

Candidates should have extensive experience in ocean science research and technology, a strong record of success in federal grant development and management, and demonstrated interest in, experience with, and vision for science education, planning, and policy. Ph.D. in an ocean science-related field and 15-plus years of experience are required. Salary is commensurate with experience.

An application letter, including a complete curriculum vitae, should be addressed to: Human Resources Manager, Consortium for Oceanographic Research and Education 1-99, 1755 Massachusetts Avenue N.W., Suite 800, Washington, DC 20036-2102.

Review of applications is expected to begin 5 January 1999 and continue until the position is filled. *CORE is an Equal Opportunity Employer.*

ASSOCIATE DIRECTOR MEDIA RELATIONS-SCIENTIFIC AFFAIRS

The Alzheimer's Association, a national voluntary health organization, has an opening at its headquarters in Chicago for a communications professional to develop national media coverage to raise awareness of its scientific research program. The incumbent will also work with chapters nationwide to help them use research information in their community awareness efforts.

Responsibilities include writing and disseminating media materials, proactively arranging media coverage and interview opportunities, conferring with scientists and researchers, interpreting research studies into lay language, and providing counsel and training for chapters. Qualifications include a degree in a related field, two-plus years of experience communicating scientific and/or medical information in lay language, three years of professional media relations experience. Prefer knowledge of the World Wide Web as a media tool. Creativity, assertiveness, computer proficiency, and strong communications skills are a must as are solid interpersonal and team-building abilities.

For confidential consideration, send your résumé and salary history to: Director of Human Resources, Alzheimer's Association, 919 North Michigan Avenue, Suite 1000, Chicago, IL 60611. FAX: 312-335-4051. *Equal Opportunity Employer.*

ASSISTANT PROGRAM DIRECTOR ANIMAL PROGRAMS

The USDA's National Research Initiative Competitive Grants Program (NRICGP) seeks an Assistant Program Director for grants administration in the animal research area. The incumbent will assist in developing and managing programs and procedures for the Animals Division of the NRICGP. Candidates must have an advanced degree (M.S., Ph.D., or D.V.M.) with major study in general animal science or veterinary medicine, or related disciplines such as animal molecular genetics, reproduction, nutrition, microbiology, epidemiology, toxicology, food safety, or food science. *Candidates must be U.S. citizens.*

Applications must be postmarked by February 1, 1999. For program information contact: Dr. Peter Johnson, Telephone: 202-401-1896; e-mail: pjohnson@reeusda.gov. For information on application procedures contact: The USDA Human Resources Division, Telephone: 202-720-6130. A copy of the vacancy announcement is available at website: <http://www.ars.usda.gov/afm/hrd/vacancy/99-021.htm>. *USDA is an Equal Opportunity Employer.*

TENURE-TRACK POSITION

The Laboratory of Molecular Immunology in the National Heart, Lung, and Blood Institute is searching for a tenure-track scientist to establish an independent research program in the area of molecular immunology. Preference will be given to investigators whose work relates to gene regulation or signal transduction. The Laboratory has an active research environment and includes groups currently focusing on the cytokine-induced signaling and gene regulation in T cells, mast cell signaling, and the immunological basis of drug-induced toxicities. Extensive collaborative possibilities exist both within and outside the laboratory at NIH. Candidates should have an M.D., M.D./Ph.D., or a Ph.D. and strong research credentials. Applicants for this position should submit a C.V., including bibliography, a statement of research interests, a two-page outline of proposed research, and the names of three references by January 22, 1999, to:

Ms. Nancy Shaw
Office of the Scientific Director
Bldg. 10, Rm. 7N214
NHLBI, NIH, 10 Center Drive
Bethesda, MD 20892-1668

NIH is an Equal Opportunity Employer.

Stem Cell Laboratory Manager

Mount Sinai-NYU Medical Center and Health System has an opportunity at our Mount Sinai campus for a Stem Cell Laboratory Manager. Reporting to the Tissue Bank Medical Director, the selected candidate will supervise processing of blood, bone marrow, and umbilical cord progenitor cells and parathyroid tissue, coordinate new procedure development and validation, manage personnel and supervise staff development. Additional responsibilities include: document maintenance, data management, preparation of workload and cost reports, and preparation of applications and activity reports.

Requirements include a PhD and experience in immunology, flow cytometry, hematology, cell biology, stem cell processing or hematopoiesis. Experience in computer operations, word processing, spreadsheets and data management programs is ideal. Excellent organizational, interpersonal and communication skills, and a strong attention to detail are required. The candidate must demonstrate successful participation in team management.

We offer an excellent salary and benefits package. For consideration, please forward your resume to: **P. Rodman, Box 1024, Mount Sinai-NYU Medical Center and Health System, One Gustave L. Levy Place, New York, NY 10029-6574; Fax: 212-876-5994.** For more information, visit our website at: www.careermosaic.com/mountsinai We are an equal opportunity employer fostering diversity in the workplace.

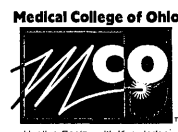


MOUNT SINAI-NYU MEDICAL CENTER
AND HEALTH SYSTEM

National Institute of Child Health and Human Development, National Institutes of Health Tenure Track Position, Epidemiology Branch, Division of Epidemiology, Statistics and Prevention Research

The Epidemiology Branch of the Division of Epidemiology, Statistics, and Prevention Research, National Institute of Child Health and Human Development announces the availability of a tenure-track position for an individual who will develop an independent epidemiology research program with a primary focus on pediatric injuries, and with a secondary focus on at least one additional epidemiological topic in maternal-child health. This position is equivalent to an Assistant Professor in the tenure track of a university. The candidate should have an M.D. degree and should have completed clinical training in pediatrics. In addition, the individual should have completed advanced training in epidemiology (M.P.H. or the equivalent), and must have a strong record of epidemiological research in pediatric injuries, with additional research in at least one other area of maternal-child health. This research should have resulted in publications in major peer-reviewed journals.

To apply for this position, please submit a two-page statement of research interests and goals, a curriculum vitae, and three letters of recommendation by **January 29, 1999**, to: Mark Klebanoff, M.D., M.P.H., Acting Director, Division of Epidemiology, Statistics and Prevention Research; National Institute of Child Health and Human Development; 6100 Executive Blvd., Room 7B05, Bethesda, Maryland 20892-7510 (fax: 301-402-2084).



MCO Endowed Chair in Microbiology & Immunology

The Department of Microbiology and Immunology at the Medical College of Ohio, together with the interdisciplinary Graduate Training Programs in Molecular Basis of Disease and in Molecular & Cellular Biology, is seeking a nationally recognized scientist to fill a newly endowed chair. MCO established this Chair as one of its strategic research initiatives to further the development of vaccines and immunotherapies relevant to chronic infection and cancer.

Candidates for the position must have scientific leadership capabilities, distinguished research productivity, and teaching experience. The candidate must also have a doctoral degree (Ph.D., M.D., M.D.-Ph.D.) and meet the College's other requirements for a tenure-track faculty appointment at the rank of Associate Professor or Professor. There are no clinical responsibilities, though a joint appointment in a clinical department is available if appropriate.

A competitive salary and start-up package will be provided, along with substantial laboratory space in a modern research building. Review of applications will begin on February 1, 1999, and will continue until the position is filled. Send a description of current research, representative reprints of published work, a curriculum vitae, and names and addresses of three references to: **Dr. Garry T. Cole, Chair, Search Committee, Department of Microbiology and Immunology, Medical College of Ohio, 3055 Arlington Avenue, Toledo, OH 43614-5806.** Nominations for this position are also invited. Further information about research and training programs at MCO can be found at www.mco.edu/micro.

Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

USDA, REE, Agricultural Research Service-Northern Plains Area, Arthropod-Borne Animal Diseases Research Laboratory (ABADRL) at Laramie, Wyoming seeks a permanent full-time scientist with demonstrated expertise in veterinary medicine, microbiology, or medical/veterinary entomology to serve as **RESEARCH LEADER**. The incumbent will be responsible for all aspects of ABADRL management including research on arthropod-transmitted viral pathogens of domestic animals; fiscal and administrative accountability; interaction with USDA administrators and cooperators in Universities and Industry. The incumbent will maintain a research program in his/her area of specialty. *U.S. citizenship* and a D.V.M., Ph.D., or equivalent is desired. Salary commensurate with experience (\$64,998 to \$99,397). Comprehensive benefits package includes paid sick and annual leave, life and health insurance, and a savings and investment plan (401(k) type) is available with the Federal retirement plan. For information on the research program and/or position contact: **Dr. Will Blackburn, Telephone: 970-229-5557; e-mail: blackbuw@ars.usda.gov**. A copy of the vacancy announcement will be available on the ARS website: www.ars.usda.gov/afm/hrd/resjobs. For information on application procedures contact: **Telephone: Jan Jones, 970-229-5502**. Applications will be accepted January 4, 1999, to March 1, 1999. Applications should be mailed to: **USDA, ARS, HRD, WOB, 5601 Sunny-side Avenue, Beltsville, MD 20705-5106**. Applications must be postmarked by March 1, 1999. *The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital and family status. Persons with disability who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact: USDA's TARGET Center, Telephone: 202-720-2600 (voice or TDD). To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue S.W., Washington, DC 20250-9410. Telephone: 202-720-5964 (voice or TDD). USDA is an Equal Opportunity Provider and Employer.*

MEDICAL/SCIENTIFIC RESEARCH ANALYST

Major Midwest law firm is seeking applicants for the position of Research Analyst. Duties include the review and analysis of medical literature on a variety of topics in the context of pharmaceutical product liability litigation. Position also requires review and analysis of medical records and the preparation and communication to non-scientists of analyses of medical issues. Position may require some travel. This is a high-intensity position that emphasizes practical application of scientific knowledge and requires a result-oriented and self-motivated individual while offering a competitive salary and excellent benefits. The position provides a unique opportunity for scientists to apply their skills outside the area of basic research.

This position requires an outstanding academic record and a graduate degree in biological, life, or biomedical sciences. A working knowledge of pharmacology and/or epidemiology is preferred but not required. Excellent communication skills, both verbal and written, are essential. No legal education or experience required, but outstanding interpersonal skills are a must.

Please send a letter of application, complete college transcripts, a personal résumé, and references to:

**Employment Supervisor
Shook, Hardy & Bacon L.L.P.
One Kansas City Place
1200 Main Street
Kansas City, MO 64105-2118**

SCIENTIST

Candidates should have a major emphasis in biochemistry; M.S. or Ph.D. required, with experience in the following areas: general protein/peptide chemistries; ELISA, cell culture, protein purification, spectroscopies, kinetics, and immunoassay.

Commonwealth Biotechnologies, Inc. (CBI) is a cutting-edge biotechnology company located in Richmond, Virginia. This is an opportunity to join a rapidly growing and dynamic research and development support facility, dedicated to providing state-of-the-art analytical services to the biotechnology industry. Salary is commensurate with experience and background; excellent benefits package offered. Send résumé and cover letter to: **Director of Human Resources, Commonwealth Biotechnologies, Inc., 601 Biotech Drive, Richmond, VA 23235. FAX: 804-648-2641; e-mail: cbi@i2020.net.**

POSITIONS OPEN



The United States Department of Agriculture, Agricultural Research Service, is accepting applications for a permanent, full-time **PHYSICAL SCIENTIST, BIOLOGICAL SCIENTIST, ENGINEER**, or related discipline. The salary range is \$47,066 to \$72,758 (plus three-percent increase cost-of-living adjustment as of January 1, 1999) per year. The position is located in the Remote Sensing and Modeling Laboratory, at the Natural Resources Institute in Beltsville, Maryland, and is open to all U.S. citizens. The objective of this position will be to develop relationships between the multispectral properties of plants and their environment with emphasis on crop growth, development, and yield for agricultural and natural resource applications. The incumbent will formulate relationships between plant response to the environment and spectral properties measured by a wide range of airborne and spaceborne sensors, and will evaluate the utility of present and proposed remote sensing systems for applications in agricultural and environmental assessment. Candidates must have a strong knowledge of environmental remote sensing, image analyses, aerial photography, and mathematical modeling and must have working knowledge in one or more of the plant and agronomic sciences. Skills in mathematical, statistical, and computer sciences necessary to perform quantitative research are required.

All applicants must request a copy of Vacancy Announcement ARS-X9E-9063. The closing date for the Vacancy Announcement is February 23, 1999. To request a copy of the announcement, **Telephone: 301-504-1484; website: www.ars.usda.gov**.

USDA/ARS is an Equal Opportunity Provider and Employer.

ASSISTANT RESEARCH SCIENTIST CODE: TK-SCI

Division of Molecular Medicine, Beckman Research Institute of the City of Hope National Medical Center. Ph.D. with postdoctoral experience to join and direct functional genomics group. Experience in high-throughput methods, mutation detection helpful.

RESEARCH FELLOW CODE: CPL-SCI

Ideal candidate will have Ph.D. or M.D. with experience in biochemistry, immunology, or cell biology. Will study NIH-funded projects on signal transduction events in T cell development or on regulatory mechanisms of type 1 diabetes. Requires a background in signal transduction, protein chemistry, immunological techniques, and handling of mice, etc.

Candidates should send a current curriculum vitae and bibliography, a description of major past research accomplishments, names of three references with contact information, and job code to: **Adrienne Fryhoff, City of Hope, Immunology Division, 1450 East Duarte Road, Duarte, CA 91010-3000. FAX: 626-301-8843; website: www.cityofhope.org**. City of Hope. Where The Power of Knowledge Saves Lives.

Equal Opportunity Employer.

Positions available in the Department of Aerobiology and Product Evaluation, U.S. Army Medical Research Institute of Infectious Diseases:

INHALATION TOXICOLOGIST: The successful applicant will be involved in studies to investigate the aerosol toxicity of infectious agents and biological toxins. Principal objectives of investigation are to develop knowledge of basic properties and physical interactions that occur between aerosol particles and the respiratory system, and subsequent biological, physiological, and immunological responses between the inhaled organisms/toxins and the host.

VACCINOLOGIST: Evaluate efficacy of candidate vaccines against inhaled microorganisms and biological toxins using appropriate animal models.

MICROBIOLOGIST: Identify new antigens by understanding the mechanism of pathogenesis and host defense against inhaled microbial agents. Study the immune response to inhaled microorganisms and biological toxins.

Interested applicants should send their curriculum vitae, statement of research interests, and names of three references to: **Dr. M. Louise Pitt, U.S. Army Medical Research Institute of Infectious Diseases, Frederick, MD 21702. FAX: 301-619-2348; e-mail: dr_m_louise_pitt@detrack.army.mil**.

POSITIONS OPEN

RESEARCH SCIENTIST. New Haven, Connecticut job site. Position at pharmaceutical research company to do investigations and design formulations with the goal of developing novel methods of drug delivery of anticancer and antiviral drugs. The formulations would be used for the treatment of various forms of cancer, and infections against hepatitis B virus. Perform physicochemical characterization of the compounds; stability studies of the bulk drug substance and of the formulation, processing, and scale-up of the formulation; assisting in pharmacological and clinical evaluation of the formulation. Develop and validate methods to identify and quantitate drugs, by-products, and drug excipients. Develop analytical method for the formulation of dosage form. Evaluate results using computer modeling. Do quality control, and do GLP reports, and statistical analysis. Coordinate all manufacturing activities of the bulk drug and finished product, including preparation of all documents related to manufacturing of the dosage form. Requires Ph.D. degree in pharmaceuticals. Other special requirements include courses or background in advance pharmaceuticals or drug delivery, advanced statistics, or biostatistics. Knowledge of HPLC, IR, and UV. Background with anticancer and antiviral drug development. Knowledge of Good Manufacturing Processes (GMP). \$63,850 per year, 40 hours a week. Send résumé and cover letter documenting minimum qualifications to: **Attn: Job Order# 3227618, Program Support—3rd Floor, Connecticut Department of Labor, 200 Folly Brook Boulevard, Wethersfield, CT 06109**. Applicants will be required to present proof of legal authority to work in the United States.

BOTANIST MINNESOTA STATE UNIVERSITY, MANKATO

The Department of Biological Sciences invites applications for an **ASSISTANT PROFESSOR** (tenure-track) position to begin 23 August 1999. Applicants must have a Ph.D. (or equivalent) related to plant science with an emphasis in plant systematics. Other considerations include university teaching experience, postdoctoral experience, and expertise in environmental conservation. The Botanist will involve undergraduate and graduate students in their research program and will serve on departmental committees. Teaching will include introductory biology, plant science, and upper-level courses including plant taxonomy and topics of expertise. Submit by 1 February 1999 a letter of interest, curriculum vitae, statements of research plans and teaching interests, transcripts, and names of three references (include telephone numbers) to: **John D. Krenz, Screening Committee Chair, Biological Sciences, MSU Box 34, Minnesota State University, Mankato, Mankato, MN 56002-8400 USA**. For further information, see "Administration" at website: www.mankato.msus.edu. For inquiries, write to e-mail: john.krenz@mankato.msus.edu. *Equal Opportunity Employer/Affirmative Action.*

MOLECULAR BIOLOGIST

POSTDOCTORAL POSITION available in the Division of Radiation Oncology to study DNA damage and recombination. Highly motivated candidates with an interest in improving gene therapy are encouraged to apply. Experience required in molecular biology, tissue culture, DNA recombination, and virus/plasmid construction. Send curriculum vitae and the names and addresses of at least three references by mail or e-mail to: **Dr. Craig Stevens, Department of Radiation Oncology, Box 97, University of Texas M. D. Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, TX 77030. E-mail: cstevens@mdanderson.org**.

The University of Texas is an Equal Opportunity/Affirmative Action Employer. Smoke-free environment. Women in minority categories are encouraged to apply.

RESEARCH ASSOCIATESHIPS IN LUNG MOLECULAR AND CELLULAR BIOLOGY

Long-term, NIH-funded positions are available (rank based upon qualifications) to study airway epithelial cell and matrix ultrastructure, biochemistry, and function in health and disease. Candidates with advanced experience in cell and molecular biology, cell culture, and immunocytochemistry are encouraged to apply. Opportunities to interact with a variety of basic scientists at this and neighboring Chicago universities exist and are encouraged. Please submit résumé, including description of research interests, to: **Rush University, c/o Recruitment, 729 South Paulina, Chicago, IL 60612. E-mail: cmurlas@rush.edu**. *Equal Opportunity Employer.*

**Staff Scientist
Laboratory of Tumor
Immunology and Biology
Division of Basic Sciences
National Cancer Institute**

The Laboratory of Tumor Immunology and Biology of the National Cancer Institute invites applications to apply for a Staff Scientist position to conduct studies in the design and development of novel immunotherapies for cancer. Applicants must have a Ph.D., M.D. or equivalent. The applicant should have experience in cellular immunology, immunoassays, or molecular biology. The applicant will be part of a highly interactive group of scientists conducting research involving experimental systems and collaborative clinical trials toward the development of novel immunotherapies for cancer, with emphasis on the development of novel recombinant vaccines. The Staff Scientist position is a 5-year appointment with potential for renewal. Salary range is commensurate with qualifications and experience. Full benefits apply. Applicants should send curriculum vitae, bibliography, and three letters of recommendation to:

**Miss Angela Childers
National Institutes of Health
10 Center Drive
Building 10, Room 4B58
Bethesda, Maryland 20892**

Applications should be postmarked by February 1, 1999.

NIH is an Equal Opportunity Employer.



Pioneer Hi-bred International, Inc.

An Equal Opportunity Employer

RESEARCH MANAGER - PROTEOMICS (Job #983995)

Pioneer's Traits & Technology Development group is conducting a search for a research manager in proteomics. The position will be primarily responsible for managing a laboratory devoted to studying gene expression at the protein level using techniques such as 2D gel electrophoresis and mass spectrometry. The laboratory will support an internal research effort in protein profiling and will work closely with an external collaborator in technology development aspects. The individual is also expected to develop a strong proteomics program aimed at analyzing aspects of plant development.

A Ph.D. or equivalent in biochemistry with at least 2 years of directly related experience using techniques such as 2D gel electrophoresis and mass spectrometry is essential. The qualified candidate should possess a strong background in protein biochemistry especially in relation to plants. It is desirable that the ideal candidate have expertise in protein extraction and purification from whole plant tissues and isolated organelles, separation of proteins by 1D/2D SDS-PAGE, quantitative analysis of 2D images (for example, using software such as Melanie) protein staining and Western blotting protocols, HPLC and affinity chromatographic protocols. However, hands-on experience using mass spectrometers in the analysis of isolated proteins and interpretation of data obtained from tandem mass spectrometry is essential. Experience in the computer analysis of protein and nucleic acid sequences (such as BLAST, FASTA etc.) is also desirable. In addition, strong communication/interpersonal skills and the ability to function as part of a team are key prerequisites for effective performance.

RESEARCH MANAGER - Agronomic Traits (Job #98384D)

This individual will be responsible for conducting original research into the molecular involvement of hormones and signal transduction in stress tolerance of corn as part of a team effort directed towards the improvement of hybrid performance. Applicants should have strong research experience in plant molecular biology at the post-graduate level with competence in aspects of both lab and field research. Other areas of experience considered particularly relevant to this position would include application of genomic methodologies to understanding gene function, the molecular study of hormone action, analyses and dissection of signal transduction pathways, a background in the use of Arabidopsis as a model organism, as well as extrapolation of results to agriculturally-important species. The successful candidate will have had experience supervising technical staff and setting research goals/timelines, a demonstrated ability to develop and implement innovative new procedures in areas of basic and applied research, excellent communication skills, as well as fluency with use of computers and genomic analyses.

Please submit your curriculum vitae in scannable format to: Pioneer Hi-Bred International, Inc. ATTN: Human Resources - Research (reference job number), PO Box 1004, Johnston, IA 50131-1004; e-mail: jobsresearch@phibred.com. For more information on these positions visit our website www.pioneer.com.

**mayo MAYO CLINIC
ONCOLOGY RESEARCH
FACULTY / RESEARCH
POSITION**

Mayo Clinic invites applications for two full-time career scientist positions at the level of Assistant, Associate, or Full Professor with joint appointments in the Department of Oncology and an appropriate basic science department. Candidates should have an outstanding, NIH-funded research program in basic or translational aspects of cancer chemotherapy. Preference will be given to applicants with interest in the areas of 1) proliferative signaling pathways and their inhibition, 2) DNA repair pathways and their inhibition, and 3) pharmacogenetics/pharmacogenomics of antineoplastic agents. An attractive package of salary, benefits, and research support will be provided. Please send a curriculum vitae and a one-page statement of research interests by March 1, 1999, to:

**Scott H. Kaufmann, M.D., Ph.D.
Chair, Search Committee
1301 Guggenheim Building
Mayo Clinic
Rochester, MN 55905**

Mayo Foundation is an Affirmative Action and Equal Opportunity Employer and Educator.

genzyme

Moving forward. With a new manufacturing facility, expanding global markets, and constant scientific innovation, Genzyme has become a major, diversified healthcare products company. **Looking ahead.** Many words can describe a goal, an achievement, or even an opportunity. But only one word can describe an opportunity like this **Genzyme.**

Framingham, MA location



STAFF SCIENTIST

Cell Biology

Employ cellular, molecular, and biochemical approaches to characterize inhibitors of TGF. Ph.D. in Cell or Molecular Biology with at least 2 years' postdoctoral training; additional experience as an independent investigator is preferred. Knowledge of growth factor signaling and/or receptor biology is essential. Must possess strong communications skills and ability to supervise and guide laboratory personnel. **Job Code: PK-98-SL**

STAFF SCIENTIST

Immunology

Study the role of Prolactin in enhancement of immune responses to support clinical indications. Ph.D. in a Life Science with a working knowledge of cellular immunology. Must have strong tissue culture skills, in vivo experience and in vitro assay experience including measurement of T cell proliferation and cellular cytotoxicity. FACS experience is desirable. **Job Code: PK-98-0599**

Qualified candidates should forward their resume, indicating job code, to: **Genzyme Corporation, Human Resources Dept., One Kendall Square, Cambridge, MA 02139.**

Genzyme uses optical scanning technology. Please use a 12 point font with minimal use of bullets, italics, underlining and bolding.

Genzyme rewards success with an excellent compensation and benefits package, including 3 weeks' paid vacation, a 401(k) plan with a company match, extensive insurance benefits and an Employee Stock Purchase Plan. An equal opportunity employer committed to a culturally diverse workforce.

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VISIT OUR WEBSITE AT WWW.GENZYME.COM/CAREERS

POSITIONS OPEN

NMR/SPECTROSCOPY LABORATORY MANAGER

The Materials Research Science and Engineering Center of the University of California, Santa Barbara is offering a Staff Research position in our NMR Spectroscopy Laboratory. Responsibilities will include the organization and supervision of a laboratory facility with capabilities that include high-resolution 500-MHz and 200-MHz Bruker NMR spectrometers (configured for liquids and solids) and Nicolet FTIR and Laser Raman instruments; adherence to laboratory health and safety policies and procedures; software development and implementation; and instrument training for undergraduate and graduate students and Postdoctoral Research staff. Minimum requirements: Ph.D. in physics, chemistry, chemical engineering, or materials science, or equivalent combination of education and experience. Experience in hands-on operation and maintenance of NMR spectrometers, specifically Chemagnetics or Bruker machines. Strong background in electronics, mechanical skills, and computer programming; UNIX preferred. Knowledge of a broad range of scientific and technological programs, which include structure determination of novel new molecular sieves, phase behavior characterization of biomolecular materials and complex fluids, and structural and dynamical studies of polymers and inorganic glasses. The candidate will also be encouraged to participate in the interdisciplinary research projects of our Materials Research Science and Engineering Center (website: <http://mrl.ucsb.edu>). Salary: \$45,200 to \$56,500 per year (hiring range); \$45,200 to \$67,800 per year (salary range). Apply by January 31, 1999. Send application letter and curriculum vitae to: Human Resources Department—Employment Unit, 3101 SAASB, University of California, Santa Barbara, CA 93106. Please reference Job Number 9808003. Affirmative Action/Equal Opportunity Employer.

DEPUTY DIRECTOR, RESEARCH AND COLLECTIONS PROGRAMS NATURAL HISTORY MUSEUM of Los Angeles County

Founded in 1913, the Natural History Museum of Los Angeles County houses a collection of over 33 million specimens and artifacts covering 4.5 billion years of the earth's history. The Deputy Director, Research and Collections Programs reports to the President and Director of the Museum and is responsible for directing the development and coordination of research, scholarly programs, management of historical and scientific collections, and the preparation of grant proposals. The Deputy Director will manage a staff of 43 including 19 Curators. The successful candidate will be a leader, scholar, and administrator in a similar kind of organization or academic setting. A Ph.D. degree in the field of earth sciences, life sciences, or American history is preferred, although other degrees considered. Send résumé to: Morris & Berger, 201 South Lake Avenue, Suite 700, Pasadena, CA 91101. FAX: 626-795-6330.

The County of Los Angeles is an Active Equal Opportunity Employer.

STRUCTURAL BIOLOGIST at Finch University of Health Sciences/Chicago Medical School. Tenure-track **ASSISTANT** or **ASSOCIATE PROFESSOR** position for a Protein Crystallographer who will interact with faculty interested in protein structure-function. Fine research environment and modern facilities in a pleasant North Shore suburb. Visit website: www.finchcms.edu/biochem/Biochem.html. Send letter, curriculum vitae, names of three references, and description of research to: Dr. K. E. Neet, Chairman, Department of Biochemistry and Molecular Biology, Finch University of Health Sciences/Chicago Medical School, 3333 Green Bay Road North, Chicago, IL 60664. Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS (six) on National Heart, Lung, and Blood Institute Training Grant in cardiovascular molecular biology. Studies include transgenics, knockouts, mouse physiology, heart failure mechanisms, gene-treatment strategies. Ph.D. and/or M.D. required. Must be a U.S. citizen or permanent resident. Contact: Dr. Arnold Schwartz, Professor/Director, Institute of Molecular Pharmacology/Biophysics, University of Cincinnati, Cardiovascular Center, Cincinnati, OH 45267. Website: <http://www.med.uc.edu/cardio-bio>; e-mail: schwara@email.uc.edu. Equal Opportunity Employer.

POSITIONS OPEN

The University of Regina is seeking applications for a tenure-track position in biochemistry at the **ASSISTANT PROFESSOR** level to commence July 1, 1999. Interested individuals should have expertise in the area of protein biochemistry with experience in the application of recombinant DNA methods to investigate the production, function, or structural features of proteins. Research interests in the faculty include the preparation, function, and structural characterization of proteins; secretion of extracellular proteins; cellular consequences of protein signaling; and protein drug interactions. Applicants must have a Ph.D. degree or equivalent, and preferably two years of postdoctoral experience. The successful applicant must be capable of mounting an original, competitive, independent research program and have a commitment to undergraduate and graduate teaching. Send a curriculum vitae, an outline of proposed research, and the names and addresses of three referees to:

Dr. K. E. Johnson
Department of Chemistry
University of Regina
Regina, Saskatchewan
S4S 0A2 Canada
E-mail: kejohnso@cas.uregina.ca

Review of applications will begin in February 1999.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Regina is committed to Employment Equity.

POPULATION/EVOLUTIONARY GENETICS

Villanova University. Entry-level tenure-track position for a broadly trained Biologist who uses molecular techniques to study the genetics of natural populations. The position entails participation in both graduate (M.S./M.A.) and undergraduate instruction in genetics and evolution, direct graduate and undergraduate research, and participation in Departmental and University activities. Requirements: postdoctoral experience, a record of productive research, and motivation to obtain extramural funding. Submit curriculum vitae, statements of teaching philosophy and research interests, and undergraduate and graduate transcripts; and have three letters of recommendation sent to:

Genetics Search Committee
Department of Biology
Villanova University
Villanova, PA 19085-1699

Deadline to ensure full consideration: January 22, 1999. Villanova University is a Roman Catholic University founded and sponsored by the Augustinian order. Villanova has a diverse faculty dedicated to Villanova's Judeo-Christian value orientation. For further information see website: www.bio.villanova.edu. An Affirmative Action/Equal Opportunity Employer.

ADVANCED TRAINING IN REPRODUCTIVE SCIENCE AND EPIDEMIOLOGY

Supported by an NICHD Women's Reproductive Health Research (WRHR) Center grant, Scholarships are being offered by the Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco (UCSF) for at least two years of intensive research training. Applicants must have completed a Residency in obstetrics and gynecology and be planning an academic career. For information, please contact: Administrative Coordinator, Patricia Randolph, Women's Reproductive Health Research, University of California, San Francisco, Telephone: 415-476-2564; e-mail: randolphp@obgyn.ucsf.edu.

UCSF is an Equal Opportunity/Affirmative Action Employer. All qualified applicants are encouraged to apply, including minorities and women.

DEPARTMENT OF NEUROLOGY COLUMBIA UNIVERSITY

Applications for a **RESEARCH STAFF ASSOCIATE** position in critical care neurology are invited. Applicant must hold a Bachelor's or higher degree, with at least four years of professional experience.

Please send curriculum vitae to: Stephan A. Mayer, M.D., Neurological Institute, 710 West 168th Street, Unit 39, New York, NY 10032. We take Affirmative Action toward Equal Opportunity.

POSITIONS OPEN

POSTDOCTORAL POSITION TO STUDY PFIESTERIA

The Integrated Toxicology Program at Duke University Medical Center offers an opening for one Postdoctoral position, available immediately. The research project involves investigation of the neurobehavioral effects and mechanism of action of the neurotoxins secreted by the marine dinoflagellate organism, *Pfiesteria piscicida*. The position requires a Ph.D. in psychology, psychobiology, behavioral neuroscience, toxicology with a neurobehavioral focus, or other related field. All candidates must have experience working with rodents in whole-animal *in vivo* experiments; highest consideration will be given to those with experience performing tests of cognitive function in rodents. This project has been funded by the Environmental Protection Agency; EPA policy limits awards to U.S. citizens or permanent residents. Send curriculum vitae and cover letter, including the names of three references to: Edward D. Levin, Ph.D., Director, Integrated Toxicology Program, Box 3412, Duke University Medical Center, Durham, NC 21170. E-mail: edlevin@acpub.duke.edu. For further information regarding the research project, contact either: Dr. Levin or Philip J. Bushnell, Neurotoxicology Division, MD 74B, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. E-mail: bushnell.philip@epamail.epa.gov.

POSTDOCTORAL SCIENTISTS WATERSHED BIOGEOCHEMIST OR HYDROLOGIST

The Marine Biological Laboratory (MBL) has Postdoctoral Scientist positions available to work with a team of Ecological Economists, Biogeochemists, Hydrologists, and Modelers that is integrating socioeconomic models with spatially explicit models of land use, biogeochemistry, and watershed hydrology to provide comprehensive assessments of human activities on nutrient, sediment, and water fluxes in coastal watersheds of the Plum Island Sound LTER. This position will be at the MBL Ecosystems Center in Woods Hole, Massachusetts. We seek individuals with a Ph.D. and expertise in one or more of the following areas: GIS, hydrology, watershed/river/stream biogeochemistry, or mathematical modeling. Application deadline is open, but may be closed at any time after January 1, 1999. Send cover letter with position desired, curriculum vitae, statement of research interests, and names and addresses of references to: Marine Biological Laboratory, Attn: Human Resources, 7 MBL Street, Woods Hole, MA 02543 (reference: Plum Island LTER Postdoc). Please do not e-mail applications/resumes.

Equal Opportunity/Affirmative Action/nonsmoking workplace.

POSTDOCTORAL FELLOWSHIP HARVARD MEDICAL SCHOOL

A position is available to join studies on molecular mechanisms of hypoxic signaling in the vasculature. Ongoing projects include the characterization of transcriptional mechanisms controlling the expression of hypoxia-regulated genes, such as VEGF, and the role of the gaseous second messengers NO and CO in gene regulation and apoptotic pathways. Outstanding candidates with strong background in molecular and cell biology, who are interested in vascular biology and cell cycle control, are encouraged to apply. Experience in transcriptional regulation and apoptosis research is highly desirable. Please send curriculum vitae and names of references to: Dr. S. Kourembanas, Division of Newborn Medicine, Children's Hospital, 300 Longwood Avenue, Boston, MA 02115. FAX: 617-355-7677. Equal Opportunity Employer.

POSTDOCTORAL POSITION available to study neuroendocrine mechanisms of reproduction using anatomical, molecular biological, and physiological approaches. Background in molecular biology is desirable. Please send curriculum vitae and three references to: Lothar Jennes, Ph.D., Department of Anatomy and Neurobiology, University of Kentucky, Lexington, KY 40536. E-mail: ljenn0@pop.uky.edu. Equal Opportunity Employer.

POSTDOCTORAL POSITION to study transport proteins from mitochondria and other membranes with protein biochemistry and molecular biology techniques. Submit curriculum vitae with three references to: Dr. H. Wohlrab, Boston Biomedical Research Institute, 20 Staniford Street, Boston, MA 02114. BBRI is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION

MOLECULAR MECHANISMS OF EPIDERMAL WOUND HEALING

DEPARTMENT OF SURGERY

WEILL MEDICAL COLLEGE OF CORNELL UNIVERSITY (Formerly Cornell University Medical College)

This is a long-standing training program in keratinocyte biology jointly administered by Lisa Staiano-Coico, Ph.D. (Weill Medical College of Cornell University, New York, NY) and Paul J. Higgins, Ph.D. (Albany Medical College, Albany, NY). Candidates with experience in molecular biology, cell growth control or mammalian cell culture are preferred. The position available is at the Weill Medical College facility. Interested applicants should forward a curriculum vitae, representative publications and three (3) letters of reference to:

Dr. Lisa Staiano-Coico
Department of Surgery
Weill Medical College of Cornell University
1300 York Avenue (Room C-612)
New York, NY 10021

Phone: (212) 746-6417
FAX: (212) 746-8467

All supporting documentation should be received by March 1, 1999

Weill Medical College of Cornell University is an equal opportunity-affirmative action employer

PENNSYLVANIA STATE UNIVERSITY



COMPUTATIONAL BIOLOGY

The Pennsylvania State University announces 3 faculty positions in COMPUTATIONAL BIOLOGY. This represents a new initiative in several departments stimulated by the Life Sciences Consortium. We seek high quality faculty applying computational approaches to interdisciplinary studies of important problems in biology. Applications, including a CV, a research plan and three letters of reference, should be made to the individual department.

BIOINFORMATICS AND COMPUTATIONAL MOLECULAR BIOLOGY in the Department of Biochemistry and Molecular Biology; entry level or midcareer faculty member. The individual will be expected to conduct innovative research in computational methods needed for functional genomics. Examples of applications for such methods include whole genome sequence analysis, utilization of high density chip arrays, and analysis of regulatory networks. The successful candidate will also engage in teaching at undergraduate and graduate levels and contribute to the development of a new graduate option in computational molecular biology.

Apply to:
Dr. Ross Hardison, Department of Biochemistry and Molecular Biology
The Pennsylvania State University
108 CB Althouse Laboratory
University Park, PA 16802

STATISTICAL GENETICS in the Department of Health Evaluation Sciences, Assistant Professor of BIOSTATISTICS: The position involves collaboration with genetic epidemiologists and molecular geneticists, statistical genetics research, development and teaching of a course in statistical genetics, and other faculty duties. Requirements for the position include a doctorate degree in statistics or biostatistics with a concentration in statistical genetics and some collaborative experience with biomedical researchers.

Apply to:
Vernon M. Chinchilli, Ph.D. Professor of Biostatistics and Vice Chair, Department of Health Evaluation Sciences, H173 College of Medicine, The Pennsylvania State University, Hershey, Pennsylvania 17033

STATISTICAL, COMPUTATIONAL GENETICS OR GENOMICS in the Department of Statistics, tenure-eligible professorship at any rank for scholar with a national research reputation. Essential qualifications include a doctorate in Statistics, or related area, excellence in research, interest and demonstrated ability in teaching, and demonstrated computing skills. Applications considered until position filled. More information available at

<http://www.stat.psu.edu> > <http://www.stat.psu.edu/>

Apply to:
Dr. Steven Thompson, Department of Statistics, 326 Thomas Building, Pennsylvania State University, University Park, PA 16802 USA

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

Postdoctoral Research Opportunities

Mount Sinai School of Medicine prides itself on the strides that it makes in research. We owe our successes to the union of true talent and remarkable resources.

**Mount
Sinai**

Gene Therapy and Molecular Biology

Two funded postdoctoral positions are available immediately in the Division of Nephrology under the supervision of Dr. Paul Klotman, Chief, Division of Nephrology. The first position will join an ongoing group effort to develop gene therapeutic approaches applied to the kidney.

The second position will involve the cloning of novel genes expressed in HIV-associated nephropathy. Candidates with a Ph.D. and documented experience in molecular or cellular biology are encouraged to apply. Reply to: **Dr. Paul Klotman, M.D., Chief, Division of Nephrology, Box 1243**

HIV-1 Pathogenesis

A funded postdoctoral position is available immediately working under the direction of Dr. Mary Klotman, Chief, Division of Infectious Diseases. The position will involve the study of the molecular basis of HIV-1 pathogenesis. Candidates with a Ph.D. or M.D./Ph.D. and experience in molecular or cellular biology are encouraged to apply. Reply to: **Dr. Mary Klotman, M.D., Chief, Division of Infectious Diseases, Box 1090**

We offer a salary commensurate with experience and excellent benefits. For consideration, please forward CV and names of three professional references, indicating "Reply to" information to: **Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574; Fax: 212-987-0389.** Visit our website at: www.careermosaic.com/mountsinai We are an equal opportunity employer fostering diversity in the workplace.

Mount Sinai School of Medicine

RESEARCH

DePuy, a leading manufacturer of orthopaedic products, located in Warsaw, IN, has an immediate opening for

SENIOR POLYMER SCIENTIST

An experienced individual is needed to lead the development efforts for new and improved materials for orthopaedic implants and associated products, including new polymer/material systems and alternative polymer processing methods. Duties include conducting research feasibility studies; designing experiments to evaluate new technology; providing technical support to Operations, Sales, Marketing, and Quality and International Affiliates; and managing technical documentation for design control and testing. Requires BS in Polymer Chemistry/Material Science or Chemical/Plastics Engineering and 8+ years' experience; or a MS/Ph.D. and 2+ years' experience. Background as a technical project leader with a proven track record of new product development in this area, is essential. Hands-on expertise in developing polymer-based medical implants is a plus.

DePuy offers an excellent salary and benefits package. Please mail your resume to: **DePuy Inc., Attn: Human Resources Manager, 700 Orthopaedic Drive, Warsaw, IN 46581-0988.** Equal Opportunity Employer - M/F/D/V.



DePuy
a Johnson & Johnson company

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIP CD40L-MACROPHAGE INTERACTIONS University of California, San Diego

A Postdoctoral position is available for studies on CD40L-macrophage interactions in the Division of Infectious Diseases of the University of California, San Diego (UCSD) Department of Medicine and the UCSD AIDS Research Institute (directed by Dr. Douglas Richman). Building on our recent finding that CD40L activates macrophages to produce HIV-suppressive beta-chemokines (PNAS 95:5205-5210, 1998), we are evaluating the regulation of CD40L on T cells in HIV infection, tuberculosis, and malignancy. These studies utilize a variety of molecular, immunological, biochemical, and microbiological approaches in a modern, well-equipped laboratory in the center of the United States' third-largest biotechnology area. The successful candidate will have a broad knowledge of current biomedical research, a strong foundation in immunology and molecular biology, dedication, a positive attitude, and a desire to learn in a challenging but supportive environment. Candidates must have a Ph.D., M.D., or equivalent, and be U.S. citizens or permanent residents. Apply by sending a statement of research experience, interests, and future plans; curriculum vitae; and the names, addresses, and telephone numbers of three references to: Richard S. Kornbluth, M.D., Ph.D., Department of Medicine—0679, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0679. FAX: 619-552-7445; e-mail: rkornbluth@ucsd.edu.

POSTDOCTORAL POSITION PROTEIN SYNTHESIS

A position is available for research in eukaryotic protein synthesis and its relationship to cell growth and oncogenesis. Current topics under investigation include initiation factor interactions, eIF4E isoforms in *C. elegans*, initiation factor phosphorylation, regulation of initiation factor expression, mechanism and regulation of internal initiation of translation, and relation of eIF4E to tumorigenesis. More information can be found at website: <http://gradsch.shreveport.lsumc.edu>. Candidates must have a recent Ph.D. in biochemistry or a related discipline or an M.D. Please send curriculum vitae and the names and telephone numbers of three references to: Dr. Robert E. Rhoads, Professor and Head, Department of Biochemistry and Molecular Biology, Louisiana State University Medical Center, 1501 Kings Highway, Shreveport, LA 71130-3932. LSU is an Equal Opportunity Employer.

POSTDOCTORAL POSITIONS IN MOLECULAR IMMUNOLOGY

Immediate position available for a Molecular Immunologist, Postdoctoral Fellow, Research Associate, or Research Assistant Professor depending on credentials, with background in antigen presentation and T cell interaction. Studies in molecular mimicry. Should have familiarity with databases. Send curriculum vitae and names of three references to: Dr. Leslie P. Weiner, Department of Neurology, University of Southern California School of Medicine, KAM 410, 1975 Zonal Avenue, Los Angeles, CA 90033. FAX: 323-442-3015; e-mail: lweiner@hsc.usc.edu. Equal Opportunity Employer.

POSTDOCTORAL POSITION. Position available July 1, 1999, or thereafter to study the actions of the helix-loop-helix proto-oncogene TAL1/SCL in normal and leukemic hematopoiesis. Current efforts focus on (1) regulation of gene expression and function in erythroid and endothelial differentiation (see: JBC 272:11457, 1997; Dev. Biol. 192:17, 1997) and (2) mechanisms of transformation through use of gene transfer and transgenic approaches. Please send curriculum vitae and names of three references to: Dr. Stephen Brandt, Division of Hematology-Oncology, Room 547 MRB II, Vanderbilt University Medical Center, Nashville, TN 37232. An Affirmative Action/Equal Opportunity Employer.

Great Lakes. **POSTDOCTORAL/GRADUATE STUDENTS** wanted to study the molecular cell biology of newly-cloned adapters Grb10 and PSM in insulin, IGF-1, PDGF action (see: Nature 324:68, 1986; Science 236: 197, 1987; EMBO J. 8:2943, 1989; J. Virol. 68:411, 1994; JBC 271:8882, 1996; J. Biochem. 122:1105, 1997; JBC 273:3136, 1998) by: Heimo Riedel, Ph.D., 2171 BIO SCI, Wayne State University, Detroit, MI 48202. Telephone: 313-577-7870; e-mail: hriedel@sun.science.wayne.edu. Wayne State University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN



POSTDOCTORAL SCIENTIST RESEARCH ASSOCIATE

Conduct molecular genetic analyses of oral cancer and nasopharyngeal carcinoma as part of NIH-funded molecular epidemiology program. We seek a highly self-motivated individual with an M.D. or Ph.D., zero to three years of previous relevant postdoctoral experience, and a strong background in molecular genetic methods. Very highly experienced and well-recommended candidates with M.S. degrees also considered. We offer a competitive salary and generous benefits package. Send curriculum vitae to: Human Resources Department, Attn: PL#2980542, Henry M. Jackson Foundation for the Advancement of Military Medicine, 1401 Rockville Pike, Suite 600, Rockville, MD 20852. E-mail: hr@hjf.org. Equal Opportunity Employer/Affirmative Action.

CELL PHYSIOLOGY/ SIGNAL TRANSDUCTION

A POSTDOCTORAL POSITION to investigate signal transduction processes in electrolyte secretion and absorption is available. Studies should include defining the molecular events and components responsible for receptor activation of the Cl channel, CFTR, using human sweat glands and cell cultures as a model system. A background in cell physiology, preferably in electrolyte transport, is required. Contemporary techniques in cell physiology such as membrane patch clamping, intracellular recording, and microfluorescence, as well as in cell biology such as immunocytochemistry, *in situ* hybridization, and RT-PCR, will be involved. Relevance to cystic fibrosis and sweat function will be emphasized. Salary will be competitive and commensurate with experience. Please send letter of interest, curriculum vitae, and names of three references to contact to:

Dr. Paul M. Quinton
Department of Pediatrics, 0831
University of California, San Diego
School of Medicine
9500 Gilman Drive
La Jolla, CA 92093-0831
E-mail: pquinton@ucsd.edu

POSTDOCTORAL POSITIONS IN IMMUNOPATHOGENESIS

Available immediately to study three areas of cellular immunity: pathogenesis of central nervous system (CNS) infections; autoimmune CNS disease; and vaccine development. Successful candidates will study T cell effector function during viral infection and autoimmune disease, T cell regulation during persistent infection, and processing/presentation of CTL epitopes. Experience in cellular immunology and animal models essential. Send curriculum vitae and names of three references to: Dr. Stephen Stohlman or Dr. Cornelia Bergmann, Departments of Neurology and Molecular Microbiology and Immunology, University of Southern California School of Medicine, MCH 142, 1333 San Pablo Street, Los Angeles, CA 90033. FAX: 323-225-2369; e-mail: stohlman@hsc.usc.edu or cbergmann@hsc.usc.edu.

POSTDOCTORAL POSITION

Available now to investigate regulation of molecular interactions of proteoglycans, lipolytic enzymes, and lipoprotein receptors. Cell culture, molecular biology, immunochemical techniques, surface plasmon resonance, recombinant DNA, and gene inactivation techniques employed. Applicants should have Ph.D. and training in biochemistry/molecular biology/cell biology. Send résumé and names of three references to: Dr. André Benadoun, Division of Biological Sciences and Nutritional Biochemistry, 321 Savage Hall, Cornell University, Ithaca, NY 14853.

POSTDOCTORAL POSITION available immediately to study the pathogenesis of enteric murine coronavirus infections. Studies are focused on molecular basis of tissue tropism in coronaviruses. Experience in molecular biology, cellular biology, or virology required. Send curriculum vitae, the names of three references, and available start date to: Susan Compton, Ph.D., Comparative Medicine, Yale University, P.O. Box 208016, New Haven, CT 06520-8016. E-mail: susan.compton@yale.edu.

POSITIONS OPEN

POSTDOCTORAL RESEARCH FELLOW ACADEMIA SINICA, TAIWAN The Molecular Glycobiology Laboratory at Institute of Biological Chemistry

Applications are invited to work on aspects of glycobiology. The laboratory has interests in a wide range of topics relating to sialobiology and other novel forms of glycosylation, including KDN glycoscience and functional significance of PNGase-catalyzed de-N-glycosylation as a posttranslational remodeling of proteins. The post is available immediately and is for two to three years. Salary is within the Academia Sinica scale (NT\$675,000 per annum; equivalent to approximately US\$20,000). The project will involve the use of biochemical and molecular biology techniques and a strong background in one or more of the following is required: biochemistry, glycoprotein purification, and gene cloning.

Applications from Fellows intending to return to Taiwan to pursue an academic career are encouraged.

Please send a curriculum vitae, bibliography, a brief description of research experience and details (the names, addresses, and telephone and FAX numbers) of two referees to: Prof. Yasuo Inoue, Institute of Biological Chemistry, Academia Sinica, Taipei 115 Taiwan, R.O.C. Informal inquiries are encouraged and can be made directly to: Professor Yasuo Inoue, Telephone: +886-2-2785-5696, ext. 6020; FAX: +886-2-2788-9759; e-mail: syinoue@gate.sinica.edu.tw.

POSTDOCTORAL POSITIONS. Two Postdoctoral positions are immediately available to study the molecular basis of T cell activation with Dr. Gregory Burrows and Dr. Halina Offner (J. Immunol. 161:5987, 1998). The projects involve rational drug design in developing molecules for controlling activation of pathogenic T cells. Applicants for this VA-funded multidisciplinary program must be U.S. citizens or permanent residents and have an M.D. or Ph.D. degree. A strong background in biochemistry, molecular biology, and structural immunology is essential. Interested applicants should send a curriculum vitae, a statement of career goals, and names of three references to: Eva Niehaus, Portland VA Medical Center, Neuroimmunology Research R&D-31, 3710 S.W. U.S. Veterans Hospital Road, Portland, OR 97201. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION is available to study the effects of chemopreventive agents on gene expression. Candidates with a Ph.D. degree and experience in molecular biology, Western blots, Northern blots, radioimmunoassay, immunohistochemistry, and immunological techniques are encouraged to send their curriculum vitae, statement of research interests, and the names of three references by e-mail or FAX to: Dr. Huang, Laboratory for Cancer Research, College of Pharmacy, Rutgers, The State University of New Jersey, 164 Frelinghuysen Road, Piscataway, NJ 08854-8020. FAX: 732-445-0687; e-mail: mthuang@rci.rutgers.edu.

POSTDOCTORAL POSITIONS

Postdoctoral positions are currently available to study the structure and function of eicosanoid synthetic enzymes and G-protein coupled receptors. A background in molecular biology, biochemistry, or chemistry is required; NMR spectroscopy experience is preferred. Qualified applicants should send curriculum vitae and three names of references to: Dr. Ke-He Ruan, University of Texas Health Science Center at Houston, Division of Hematology, Telephone: 713-500-6769; FAX: 713-500-6810; e-mail: kruan@imed2010.med.uth.tmc.edu.

POSTDOCTORAL FELLOWSHIP/RESEARCH ASSOCIATE position is available immediately for a recent Ph.D. in biochemistry/pharmacology/cell biology to study signal transduction through G protein-coupled receptors in normal and disease states. Send curriculum vitae with references to: Madan M. Kwatra, Ph.D., Departments of Anesthesiology and Pharmacology, Duke University Medical Center, P.O. Box 3094, Durham, NC 27710. E-mail: kwatr001@mc.duke.edu; FAX: 919-681-8089.

POSTDOCTORAL POSITIONS available in macromolecular NMR laboratory. Projects include protein-RNA complexes involved in ribosome biogenesis and RNA and DNA structure and dynamics. Experience in protein or RNA NMR or nucleic acid molecular biology required. Send curriculum vitae and names of three references to: Professor Juli Feigon, Department of Chemistry and Biochemistry, University of California, Los Angeles, P.O. Box 951569, Los Angeles, CA 90095-1569. E-mail: feigon@mbi.ucla.edu.

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SENIOR SCIENTIST, ORTHOBIOLOGIC TECHNOLOGIES

Develop and manage research programs involving the development of new products that incorporate advanced biological technologies or biomaterials utilized in cartilage repair. Oversee animal research programs; interface with surgeons and researchers; and assess and apply new research activities. Provide technical assistance to various departments; and ensure quality conduct of design, data summary and interpretation, report and manuscript preparation and review adherence to applicable regulations. Assist in development of surgical techniques; instrumentation and testing protocols. Requires 30% travel. MS in Biomaterials, Bioengineering or Biochemistry and 3 years' experience required. Ph.D. with 1 year's experience preferred. Familiarity with technological terminology, materials testing equipment and equipment used for chemical and physical analysis necessary. Knowledge of the following also required: cartilage biology and biomechanics; animal study management; arthroscopic surgical techniques; and good laboratory practices.

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POSITIONS OPEN

POSTDOCTORAL SCIENTIST/ CONSULTANT IN IMMUNOLOGY

A two-year Postdoctoral position is available in the field of human immunology and autoimmunity. The position is a consultant position at SmithKline Beecham Research and Development (King of Prussia, Pennsylvania, United States), a world-class leader in research and development. Our state-of-the-art research facility located in suburban Philadelphia, in conjunction with the clinical pharmacology site in West Philadelphia, seek a Postdoctoral scientist to work in the Department of Immunopharmacology. The project includes evaluating human lymphocytes as well as rheumatoid arthritis synovial tissue and fluid. Studies will include looking for novel cytokines and receptors, evaluating the antigen specificity of T cell lines and clones, and evaluating responsiveness to pharmacologic manipulation. Qualifications include a Ph.D. in immunology, biochemistry, molecular biology, or a related field, plus demonstrated creativity and productivity as evidenced by a strong publication record. An extensive knowledge of flow cytometry, development of primary cell lines and clones, and immunochemical techniques are required. Excellent oral and written communication skills and the ability to effectively interact in a multidisciplinary team are key. Provide a curriculum vitae and a list of three references to: William V. Williams, M.D., SmithKline Beecham Pharmaceuticals, 51 North 39th Street, Philadelphia, PA 19104. E-mail: william_v_williams@sbphrd.com.

POSTDOCTORAL POSITION HARVARD MEDICAL SCHOOL

Funded position available immediately to study the expression of inducible nitric oxide synthase in epithelial cells, and its role in epithelial barrier function using molecular biology and biochemistry. Send a description of research interests, curriculum vitae, and three references to: Russell Delude, Ph.D., Department of Surgery, Beth Israel Deaconess Medical Center, DA815, 330 Brookline Avenue, Boston, MA 02215. E-mail: rdelude@bidmc.harvard.edu. *Harvard University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION is available immediately to study signal transduction by protein kinases and mechanism(s) of cell death by TNF or anticancer agents. Experience in molecular biology and biochemistry preferred. Send curriculum vitae and names of three references to: Dr. Alakananda Basu, Department of Molecular Biology and Immunology, Medical Education Building-2, University of North Texas Health Science Center, 3500 Camp Bowie Boulevard, Fort Worth, TX 76107-2699. Telephone: 817-735-2487; FAX: 817-735-2133; e-mail: abasu@hsc.unt.edu.

The University of North Texas Health Science Center is an Equal Employment Opportunity/Affirmative Action Institution.

POSTDOCTORAL POSITIONS are available to study the function of tumor suppressor genes. The desired candidates should have a background in molecular biology. Background in the field of apoptosis and/or cell cycle, as well as knowledge in yeast two-hybrid screening, phage display, SAGE analysis are preferable. Please send curriculum vitae and a list of three references to: Dr. Yong Q. Chen, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield Avenue, Detroit, MI 48201. FAX: 313-577-0057; e-mail: yqchen@med.wayne.edu. *WVSU is Equal Employment Opportunity/Affirmative Action.*

POSTDOCTORAL POSITION available immediately to study molecular/cellular biology and regulation of inducible human nitric oxide synthase (*PNAS* 95:7625, 1998), and its signaling in airway inflammation. Ph.D. or M.D. and experience in molecular biology/biochemistry are desired. Apply to: N. T. Eissa, M.D., Baylor College of Medicine, One Baylor Plaza, FBRN B567, Houston, TX 77030. FAX: 713-793-1445; e-mail: cissat@hotmail.com.

Baylor College of Medicine is an Equal Opportunity/Affirmative Action/Equal Access Employer.

POSTDOCTORAL POSITIONS in molecular pharmacology. We are creating novel therapeutic proteins by combinatorial library methods, and evaluating their function in cells. A Ph.D. with good molecular biology experience is essential. Send curriculum vitae and names of two references to: Dr. R. L. Juliano, Department of Pharmacology, CB# 7365, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7365. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL APPOINTMENT FISHERIES

The University of Georgia's Marine Institute and Marine Extension Service announce a jointly funded opening for an active, field-oriented scientist to conduct research on early life history development of fishes indigenous to the coastal marshes of the southeastern United States. There is no limit on the species of interest, but emphasis on potential aquaculture species, such as black sea bass and sheepshead, is preferred.

This full-time, 100 percent research appointment offers a 12-month salary, and will be funded for two years. Though not a requirement, the incumbent would be encouraged to develop outside funding sources. The successful candidate will reside at the Marine Institute on Sapelo Island, but will also be expected to develop professional interactions with Marine Extension personnel at the Savannah and Brunswick, Georgia facilities developing a marine aquaculture fishery in coastal Georgia.

The position requires a Doctorate degree in an appropriate field and is available January 1999. Interested individuals should send a cover letter, curriculum vitae including statement of research interests, and the names, addresses (including e-mail if available), and telephone numbers of at least three potential referees to either: Dr. James J. Alberts, Director, University of Georgia Marine Institute, Sapelo Island, GA 31327. Or: Dr. Randal L. Walker, Director, University of Georgia Marine Extension Service, School of Marine Programs, University of Georgia, Athens, GA 30602.

The University of Georgia is an Equal Opportunity/Affirmative Action Institution.

POSTDOCTORAL POSITION EVANSTON NORTHWESTERN RESEARCH INSTITUTE Viral Pathogenesis

A Postdoctoral position is immediately available to study the molecular basis of Theiler's virus persistence in the central nervous system of mice, including virus-receptor interactions. This infection in mice provides a highly relevant animal model for multiple sclerosis. The applicant should have a Ph.D. in molecular virology, biochemistry, or neuroscience. Send curriculum vitae and names of three references to: Dr. Howard Lipton, Evanston Northwestern Research Institute, 2650 Ridge Avenue, Evanston, IL 60201-1750. E-mail: hlipton@merle.acns.nwu.edu. *An Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH/ STRUCTURAL BIOLOGY

Two positions available immediately: (1) subunit folding and dynamics in mechanisms of virus assembly; (2) structural determinants of recognition in DNA-protein complexes. Research involves Raman and UV-resonance Raman spectroscopy to probe biomolecular structure/function. Experience in protein/DNA isolation and characterization, or vibrational spectroscopy is preferred. English proficiency is essential. Résumé and three letters of reference to: Dr. George J. Thomas, School of Biological Sciences—BSB 403, University of Missouri—Kansas City, 5100 Rockhill Road, Kansas City, MO 64110. *Equal Opportunity Employer.*

POSTDOCTORAL FELLOW, IMAGING AND COMPUTING TECHNICIAN, and RESEARCH ASSOCIATE positions are available at the Lawrence Berkeley National Laboratory, Berkeley, California. Participate in the study of molecular organization of the cell nucleus using 3D fluorescence microscopy and quantitative image analysis. A strong math background and experience in microscopy, C/C++, and UNIX important. Send résumé, names of three references to: Dr. S. Lockett, Lawrence Berkeley Laboratory, MS 84/171, Berkeley, CA 94720. E-mail: sjlockett@lbl.gov. View full job description and further information at our website: <http://www.lbl.gov/CJO>. *Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS to study biochemistry and genetics of recombination and repair in mammalian cells. Current projects focus on telomere and rDNA maintenance, and on immunoglobulin switch recombination and somatic hypermutation in activated B lymphocytes. Send résumé, names of references, and a statement of research accomplishments and interests to: Dr. Nancy Maizels, Departments of Molecular Biophysics and Biochemistry and Genetics, Yale, 266 Whitney Avenue, New Haven, CT 06520. E-mail: nancy.maizels@yale.edu.

POSITIONS OPEN

POSTDOCTORAL FELLOW

The Rush Heart Institute Center for Pulmonary Heart Disease (Rush-Presbyterian-St. Luke's Medical Center, Chicago) is seeking a full-time Postdoctoral Fellow to provide direct support with experiments designed to elucidate mechanisms underlying the pathogenesis of heart failure and pulmonary hypertension. The candidate must demonstrate expertise in protein biochemistry, have experience in protein separation/purification and enzyme activity assay development, and have a Ph.D. in a field relevant to molecular biology and protein biochemistry. Inquiries may be directed by e-mail to: Dr. Lawrence Zisman, e-mail: pjh@rush.edu.

RESEARCH ASSISTANT

The Rush Heart Institute Center for Pulmonary Heart Disease (Rush-Presbyterian-St. Luke's Medical Center, Chicago) is seeking a full-time Research Assistant to provide direct support to Lawrence Zisman, M.D. with experiments designed to elucidate mechanisms underlying the pathogenesis of heart failure and pulmonary hypertension. The candidate must demonstrate expertise in manipulating RNA and DNA; be capable of performing molecular biology techniques including PCR, cloning/subcloning, Southern hybridization, Northern hybridization, ribonuclease protection assay, library screening, and cell culture transfection; and have a Master's or Bachelor of Science degree in a field relevant to molecular biology. Inquiries may be directed by e-mail to: Dr. Lawrence Zisman, e-mail: pjh@rush.edu.

THE REGULATION OF CELLULAR PROLIFERATION AND DIFFERENTIATION

POSTDOCTORAL and RESEARCH ASSOCIATE positions are available to investigate the regulation of cellular proliferation and differentiation. Highly motivated individuals are sought to investigate mechanisms that control the cell cycle and bring about growth arrest during differentiation. Outstanding research environment and competitive compensation. Initial appointments can be made for two years. Send curriculum vitae and the names of three references to:

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POSTDOCTORAL POSITIONS IN MOLECULAR BIOLOGY AND HISTOLOGY AT SAN ANTONIO

Three Postdoctoral positions are available to join an interdisciplinary group studying hormonal regulation of gene expression related to aging and cancer. For two Molecular Biologist positions, previous experience in DNA/protein interaction and/or transcriptional regulation is required. For the Histologist position, expertise in immunohistochemistry is essential. Please send curriculum vitae and names of three references to: Arun K. Roy, Ph.D., Professor of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, TX 78284. FAX: 210-567-3846. *The University of Texas Health Science Center at San Antonio is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS IN AUTOIMMUNITY

Rheumatology at UCLA seeks Postdoctoral Trainees, molecular biology/genetics or cellular immunology background, for studies in genetics, immune tolerance, and biology of autoimmunity, particularly SLE. U.S. citizenship or permanent resident, Ph.D. or M.D. degrees required.

Send curriculum vitae, names and addresses of two references, and relevant publications to: Betty Tsao, Ph.D. or Beva Hahn, M.D., UCLA Rheumatology, 1000 Veteran Avenue, Los Angeles, CA 90095. FAX: 310-206-8606; e-mail: btsoa@med1.medsch.ucla.edu.

POSTDOCTORAL POSITIONS available immediately in biochemistry/molecular biology. The research will transfer genomics on glycosyltransferases and other enzymes into functional proteins for biomedical applications. Send curriculum vitae to: Dr. P. George Wang, 373 Chemistry, Wayne State University, Detroit, MI 48202. For more information see website: <http://alien.chem.wayne.edu>. *Wayne State University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.*



National University of Singapore Special Programme in Science Faculty Search

The Special Programme in Science (SPS) at the National University of Singapore began in 1996 with the expressed aim of being an intense programme in science that would challenge and inspire a group of talented students in a stimulating environment that would afford the best science education for each student. Most students in the SPS enrol in the university-wide Talent Development Programme intended for those who have the potential to become leaders in their chosen areas of study. An integral part of the SPS involves the teaching of science using an interdisciplinary approach. Among other goals, the SPS is designed to sharpen the analytical ability, and to cultivate creativity and good communication skills in the students. Students in the programme enjoy innovative teaching strategies, and close interaction with the instructors. The SPS shares a common spirit with similar programmes in other universities, such as, the Science One program at the University of British Columbia (UBC) and the Experimental Study Group (ESG) at the Massachusetts Institute of Technology (MIT). The National University of Singapore belongs to the same league as the eighty-eight top "Research 1 Universities" in the USA by the Carnegie Classification.

We invite applications for the following positions in connection with the programme.

Director

The Director is responsible for the administration as well as the leadership that advances the programme. A candidate for the post should possess a Ph.D. and a record of teaching and research excellence in any field of science. The Director is expected to cultivate an intellectually challenging learning environment for a group of talented undergraduates from diverse disciplines in science. The Director should participate in the teaching and supervision of undergraduates in the programme, and initiate innovative pedagogical approaches that inspire motivated students to excel. The Director is the leader of a team of instructors drawn from the major disciplines of science. The Director should possess excellent inter-personal and communication skills, and be able to manage public and media relations pertaining to the programme.

Instructors

An instructor for the programme is a member of the interdisciplinary team that is responsible for curriculum development as well as the teaching and supervision of students in a stimulating learning environment. An instructor should hold a Ph.D. in a field of science or mathematics and must engage in active research in science and be able to guide talented students in projects that are possibly at the forefront of scientific endeavour. The candidate should be conversant with the latest progress in various areas of science and be able to incorporate recent advances in his/her own areas of specialization into classroom instruction. Experience in teaching science with an interdisciplinary perspective and interacting with students of exceptional academic ability will be helpful. An instructor should have outstanding teaching ability and be able to develop good rapport with the students.

The remuneration for these posts range from S\$58,800 to S\$177,840 (US\$1 = S\$1.65) and are commensurate with the qualifications and experience of the candidates. Application forms and more information may be obtained from the website:

<http://sps.nus.edu.sg/>

or from:

Professor Soo Ying LEE
Dean of Science
National University of Singapore
Lower Kent Ridge Road
Singapore 119260
Republic of Singapore

Email: scidean@nus.edu.sg
Fax: (65) 777 4279

Completed forms and three letters of recommendation should be submitted to the Dean of Science at the above address by **14 February 1999**.

Only shortlisted candidates will be notified.

POSITIONS OPEN

DEVELOPMENTAL REGULATION OF TRANSCRIPTION AND MORPHOGENESIS

A **POSTDOCTORAL POSITION** is available to study transcriptional regulation of *Drosophila* development. Projects include determining how homeoproteins act as genome wide regulators to control morphogenesis (see: *Development* 125:4471, 1998) and detailing how Zeste maintains activation and repression of the homeotic gene Ubx (see: *Proc. Natl. Acad. Sci. USA* 94:6602, 1997). Send a curriculum vitae and arrange to have two letters of recommendation forwarded to: **Mark Biggin, Yale University, Molecular Biophysics and Biochemistry, P.O. Box 208114, 266 Whitney Avenue, New Haven, CT 06520-8114. E-mail: mark.biggin@yale.edu.**

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The course provides a broad perspective of vector biology and emphasizes modern molecular and quantitative techniques. Subjects covered include gene regulation, molecular systematics, genetic manipulation, blood-feeding, behavior, and population biology. The course is designed primarily for advanced students (M.S., Ph.D.), Postdoctoral Fellows, and faculty. Enrollment is limited to 30 students. Financial aid may be provided based on need. Previous applicants are encouraged to reapply. A course announcement and an application form can be found at website: <http://mediswww.meds.cwru.edu/dept/genetics/bdvcourse/>.

If unable to apply electronically, or if further information is needed, please contact: **Dr. Marcelo Jacobs-Lorena, Case Western Reserve University, School of Medicine, Department of Genetics, 10900 Euclid Avenue, Cleveland, OH 4416-4955 USA. Telephone: 216-368-8749; FAX: 216-368-3432; e-mail: bdvcourse@po.cwru.edu.** Application deadline is February 26, 1999.

POSITION WANTED

Experienced Teaching Professor in gross, embryo, histo-, neuro-, and molecular biology seeks **ADMINISTRATIVE or FACULTY POSITION** in medical/allied health program that values integrated teaching using traditional lecture and CBT formats. Have ongoing research and authorship of numerous books in above-mentioned areas. Send inquiries to: **PakMail, Suite 273, 899 Tanglewood Drive, Wheeling, IL 60090.**

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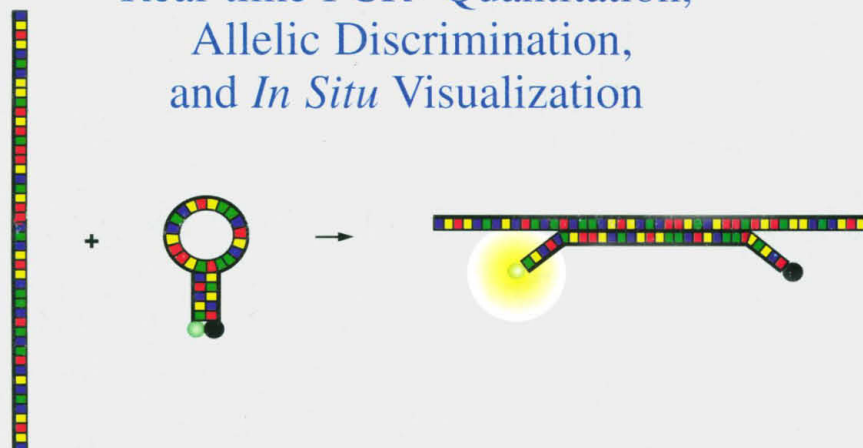
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Molecular beacons have proven to be valuable tools for many different applications. First, they may be used in real-time quantitation assays.² That is, these probes can measure the number of amplicons synthesized during a polymerase chain reaction without removing unbound probes from the solution. From these amplification measurements, it is possible to determine the target copy number in the original sample. Second, these probes may be used for end-point allelic discrimination.^{3,4} By designing molecular beacons with different dyes attached, it is possible to distinguish a homozygote from a heterozygote simply using an ultraviolet light. Third, with even a single nucleotide mismatch the target-hybrid will not have the strength to overcome the stability of the stem. Therefore, no fluorescence will result unless the target is perfectly complementary. Using several different fluorophores, multiple targets may be distinguished in the same solution, even if they differ by only one nucleotide. One paper, from the Public Health Research Institute in New York, describes assays containing four molecular beacons with four different dyes in one well.⁵ Most recently, the molecular beacons have been used in applications involving *in situ* visualization of mRNA in living cells.^{6,7}

Research Genetics offers custom synthesis of molecular beacons. For more details please e-mail pbonner@resgen.com.

Ref:

1. Tyagi, S. and Kramer, F.R. (1996) *Nature Biotech.* 14, 303-8.
2. Tyagi, S., Bratu, D. and Kramer, F.R. (1998) *Nature Biotech.* 16, 49-53.
3. Kostrikis, L.G. et al (1998) *Science* 279, 1228-9.
4. Piatek, A. et al (1998) *Nature Biotech.* 16, 359-63.
5. Marras, et al *Genetic Analysis* (in press).
6. Matsuo, T. (1998) *Biochimica et Biophysica Acta* 1379, 178-184.
7. Sokol, D. et al (September 1998) *Proc. Natl. Acad. Sci. USA* Vol 95, 11538-11543.

[†]The Polymerase Chain Reaction (PCR) process is covered by patents owned by Hoffman-LaRoche. Use of the PCR process requires a license. A license may be obtained by purchase and use of authorized reagents and DNA thermocyclers from the Perkin-Elmer Corp. or by otherwise negotiating a license with Perkin-Elmer.

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