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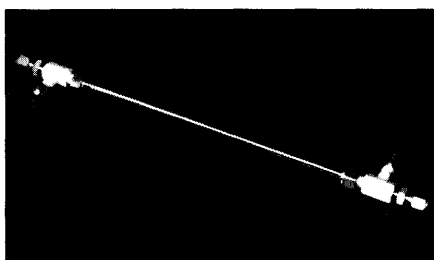
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Laboratory Technology Trends

Charting the Landscape of Death: New Tools for Studying Apoptosis



**Moderating the
Process**

Deadly Details

**A Plenitude
of Pathways**

**What Type
of Death?**

**Tracking the
Mechanisms**

**Naive and
Sophisticated
Users**

Apoptosis, or programmed cell death, plays a key role in the onset and treatment of several diseases from cancer to neurodegenerative ailments. New instruments and bioreagents are helping researchers to understand the nature and significance of cellular death. *by Peter Gwynne and Gary Heebner*

Death has been a fact of life since the first living organism appeared on the Earth about three billion years ago. Scientists have long studied this process in the effort to understand both its purpose and its mechanisms. As researchers have expanded their understanding of death at the cellular level, they have realized that the particular form of dying known as apoptosis extends into many areas of physiology and biology. In fact they have established that this form of cell death is a normal mechanism for tissue homeostasis and life. Apoptosis serves to remove unnecessary, damaged, or aged cells.

Not surprisingly, then, research on apoptosis has potential relevance to a wide variety of human diseases. "Understanding the mechanism and all its regulators has profound implications for neurological diseases and cancer therapy," says Mark Willingham of the Department of Pathology at Wake Forest University School of Medicine. Laboratory and clinical researchers who seek to understand and treat AIDS, autoimmune diseases, viral infections, cardiovascular diseases, osteoporosis, and aging, among other ailments, also hope to benefit from a precise understanding of the processes involved in this slow form of cellular death.

In recent years, apoptosis has also started to play a role in fundamental studies of life science at the general level. "Cell biologists are incorporating apoptosis more into their current research," says Brian Conkle, marketing manager of Alexis Biochemicals.

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Moderating the Process

Once they know the precise details of cellular death throes, researchers hope to take the next step: influencing the process. "Apoptosis is a cascade process that theoretically can be switched on and off," explains Katherine Wood, director of research and development at Trevigen, Inc. "There's a need to develop agents to moderate apoptosis," adds Robert Zipkin, president of BIOMOL Research Laboratories, Inc.

In most cases that moderation is designed to prevent apoptosis from occurring. But in some examples, such as getting rid of cells infected by viruses, scientists try to accelerate it. That leads to an ironic situation. A couple of decades ago, recalls Richard Youle, chief of the biochemistry section at the National Institute of Neurological Disorders and Stroke, "Animal cells grown in culture all died. It took years to figure out the right types of media, growth factors, and substrates to keep them alive. It's fascinating that scientists are now trying to figure out ways to kill cells."

Pharmaceutical researchers have discovered the value of apoptosis. "They have an interest in using it as a marker for drug discovery and design," says Wood. "Any apoptosis marker that is discovered or developed will be important in the pharmaceutical industry."

Beyond its obvious practical benefits, apoptosis has a role in much of present-day cellular biology. "It is a central phenomenon — a series of steps that control the longevity of cells," says Roberto Campos, vice president of research for BD Transduction Laboratories. "More and more, cell biologists have to deal with it," says Craig Sorensen, director of R&D and new product strategic planning for Oncogene Research Products.

Researchers who need products, reagents, and technologies to study apoptosis thus split into two groups with different needs. Scientists at the cutting edge of understanding programmed cell death need



"The big discoveries are out there. It's not clear what technologies are needed to make them." — Richard Youle, National Institute of Neurological Disorders and Stroke

cutting-edge tools. "Companies are taking advantage of known pathways for apoptosis and developing specific regulators," explains Willingham. Scientists who must cope with apoptosis in broader investigations, rather than trying to understand it, have different requirements. "They need user-friendly kits that don't take time to learn," Campos points out. "For them the name of the game is convenience."

All parties involved in apoptosis research — academic and corporate researchers and the vendors who provide them with tools — face a difficult task. For while life scientists have unearthed plenty of details about the various biochemical pathways taken by dying cells, they have yet to link up those details. In other words, nobody has yet puzzled out the broad picture or how to put it together. "The big discoveries are out there," says Youle. "It's not clear what technologies are needed to make them."

Deadly Details

Cells develop in much the same way as other organisms. They divide to produce offspring and ultimately stop dividing and die. That sounds as simple as the description in T. S. Eliot's poem "Sweeney Agonistes": "Birth, and copulation, and death. That's all the facts when you come to brass tacks." However, as scientists have investigated the details of programmed cell death and the multitude of mechanisms or pathways involved in it, they have come to realize that dying is a complex process indeed at the cellular level.

Several different events can trigger the death of cells, including exposure to ultraviolet radiation and chemotherapy agents. The actual dying can take

place in two different ways, analogous to accidental death and suicide. When cells perish as a result of acute injury to the cellular membrane caused by outside agents, they undergo the form called necrosis. The suicidal form of cell death, apoptosis, occurs when cells activate a genetically coded program of steps that lead to their death.

Necrotic and apoptotic cells undergo significantly different dances of death. Necrosis causes cells and their organelles to swell, because the injury that they suffer disrupts the ability of plasma membranes to control the passage of ions. As a result the contents of the cell leak out and inflame surrounding tissues. The subsequent repair and scarring leads to a permanent change in the tissue's composition and appearance before it dies. Necrosis kills the cells fast, within minutes to a few hours.

Apoptosis, in contrast, "can take from many hours up to a day to occur," says Willingham. This programmed death involves several stages. At the start of the process the cells shrink and their internal power plants, the mitochondria, break down and release the protein cytochrome c. With the process under way, several other changes occur. The DNA in the cell's nucleus degrades into small fragments of about 200 base pairs apiece. The cell surface develops blebs and eventually forms blisters. Roughly one-third of cells going through apoptosis undergo translocation of a "hidden" lipid (phosphatidyl serine) that is usually concealed in the cells, exposing this lipid on their surfaces. The lipid can be identified with Annexin V which binds to phosphatidyl serine.

Also involved in the process are caspases. These are

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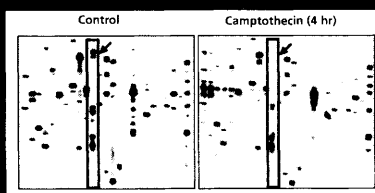
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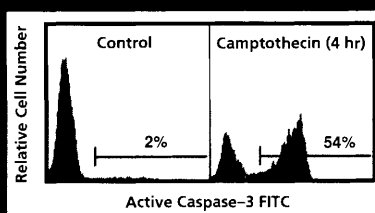


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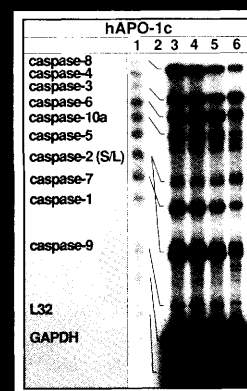


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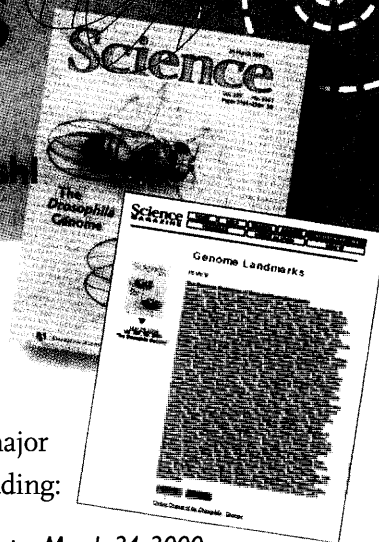
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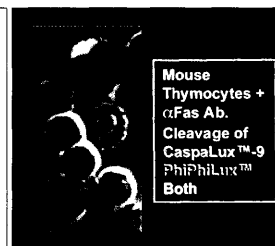
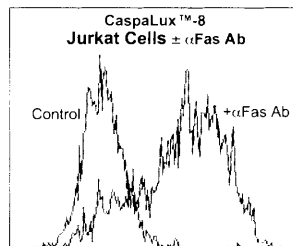


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To make practical use of apoptosis, specialists in the field want to discover the exact biochemical pathway the process takes each time it occurs. That's far more difficult than one might think.

members of a family of at least 14 proteases that promote apoptosis by cleaving proteins. Cleaving by one caspase activates other caspases. That leads to a cascading set of reactions that ends in the cell's death. All apoptotic cells also produce cytokines. By inhibiting inflammation in the region around dying cells, these ensure that the deaths have minimal effect on surrounding tissues.

Why do cells commit suicide? Fundamentally to ensure the continued good health of the organ of which they form a part. The process can help the body to develop naturally. For example, apoptosis encourages formation of the fingers and toes of a human fetus by removing the tissue between them. Similarly, menstruation starts when apoptosis helps to remove the endometrium, the inner lining of the uterus. Apoptosis can also fight off threats to the body, by forcing cells infected with viruses or damaged at the genome level to go into a terminal phase.

A Plenitude of Pathways

To make practical use of apoptosis, specialists in the field want to discover the exact biochemical pathway the process takes each time it occurs. That's far more difficult than one might think. "So far, scientists haven't identified an absolute linear pathway," says Wood. "There seem to be different pathways leading to the same end point." Indeed, adds Youle, "We are still finding new pathways involving new genes and proteins. New genes that are important have been discovered in the past two months." How do these new components influence apoptosis? "Their mechanisms and action are not known," says Youle.

While the detailed mechanisms remain mysterious, apoptosis does follow a general path. First, the process needs a trigger. That can take two main forms. Most cells receive continual signals from the cells around them. Such signals include growth factors for neurons and Interleukin-2. When the signals cease, apoptosis starts. Alternatively, the arrival of negative signals can start the process. Several negative signals exist, among them increased levels of oxidants inside the cell and damage to the cell's DNA by radiation or chemical toxins.

Those signals take effect inside the cell. Another type of signal, molecules called "death activators," work outside the cell by binding to specific receptors on the cell surface. Death activators include tumor necrosis factor

(TNF) and lymphotoxin, both of which bind to the TNF receptor, and Fas ligand (FasL) that binds to a receptor called Fas or CD95.

Internal and external signals set off apoptosis in different ways. The mitochondria of cells that receive internal signals express a rapid series of reactions, releasing cytochrome c and activating caspase 9, one of the family of proteases. That sets off a cascade of reactions involving other caspases. Those reactions ultimately degrade the DNA in the cell's nucleus and kill the cell.

In the case of external signals, the death activators lead to a different caspase, number 8. The caspase works in the same way as its sibling caspase 9, setting off a cascade process that leads to the cell's death.

To explore the pathways in detail, apoptosis researchers use a variety of assays, instruments, and reagents. Research teams often develop their own approaches, but companies that specialize in cell signaling and apoptosis try to stay in touch with the field by licensing new technologies or developing their own versions of new assays. In the rest of this article we explore some of the most popular types of assay.

What Type of Death?

Researchers at both the specialist and general levels first need to know whether dying cells have succumbed to necrosis or apoptosis. Not every assay designed to detect cellular death can tell. Nevertheless, several methods exist to differentiate between them based on the varying morphologies and chemistries exhibited in the two different dances of death.

The simplest way to tell which form of death a cell is undergoing seeks changes in morphology. "The first example of this involved segmentation of the cell nucleus, which changes the morphology of the nucleus dramatically," says Willingham. "That has been the sort of gold standard in detecting apoptotic cells." To identify apoptosis-induced changes in the nucleus and other parts of the cell, scientists typically rely on optical microscopes. Time-lapse microscopy clearly reveals such changes as the formation of blebs on cell surfaces and the condensation of chromatin in the nucleus.

Cell-permeable stains such as Hoechst 33342 can also be used to visualize the condensed nuclear chromatin. Molecular Probes and other companies provide specialized stains and probes for differential staining of living cells. Microscopes from Zeiss, Nikon, and Olym-

pus outfitted with video cameras help to document the morphological changes revealed by the stains.

Molecular changes also help to differentiate between necrosis and apoptosis. Necrosis degrades chromosomal DNA in a nonspecific way, leading to a DNA smear on analysis by agarose gel electrophoresis. Apoptosis, by contrast, is characterized by nonrandom fragmentation of chromosomal DNA. Several techniques can identify the fragments, including agarose gel analysis, PCR analysis, comet assays, and ELISA systems. TUNEL (for terminal deoxynucleotidyl transferase mediated dUTP nick end labeling) assays have recently joined the list. These use TdT to end-label 3'-OH groups exposed during the fragmentation of DNA. Trevigen launched its first TUNEL-based kit for in situ detection of apoptosis in 1995. Trevigen, Promega, and other companies have recently introduced more advanced TUNEL kits.

Antibodies provide another form of identification. Monoclonal antibodies can be used to detect the presence of several of the caspases, which are intimately involved in apoptosis. Several companies offer antibodies to these and other chemical components that emerge in the apoptosis process. "Antibodies make up a wide range of tools," says Leigh Gaskill, life science product manager at Sigma Chemical Company.

Tracking the Mechanisms

Because they play a significant role in programmed cell death, caspases form the basis of several assays designed to obtain specific details of the process. Several companies have used these proteases to produce substrates and inhibitors to study their activity. Bio-Rad, BD PharMingen, Chemicon, Clontech, Oncogene Research Products, Sigma Chemical, and Upstate Biotechnology offer reagents used for this detection method in kits. Companies that offer the individual reagents used in this assay include Alexis Biochemicals, Calbiochem, Enzyme Systems Products, Oncogene Research Products, and Quality Controlled Biochemicals.

BIOMOL's Zipkin outlines the demand for this type of assay. "We realized through customer input that there was a dire need for recombinant caspases for drug discovery and other purposes," explains Zipkin. "So we cloned, expressed, and assayed caspases one through 12. We've taken them and produced drug discovery kits." Adds Sorensen of Oncogene: "One group of drug researchers is looking at modulators and caspase activ-

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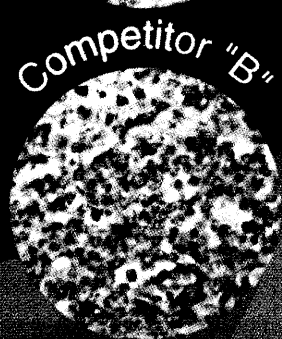
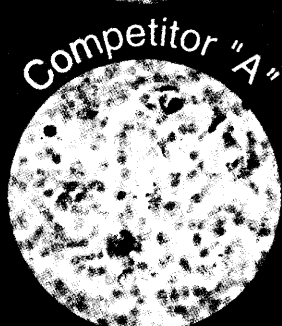
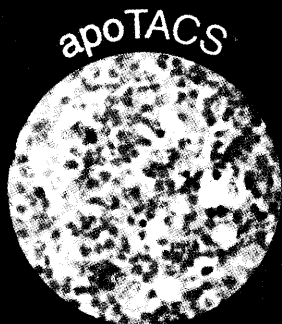
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ity, specifically upstream. Companies are also looking at breaking up complexes in protein-protein reactions."

Mitochondria power up cells by generating electrical potential across the mitochondrial membrane. The onset of apoptosis quickly decreases that potential. That causes changes to the Bcl-2/Bax family of proteins that exist in the membrane. Thus studying the activation and inhibition of these proteins helps scientists to understand these pathways and their relevance to cell death. Specialists in apoptosis pay particular attention to them not only because they control changes in the cell at the early stages of apoptosis but also because those changes can at times be reversible. In other words, the cell is not committed to die at that stage. This, says Wood, promises to become the next focus area in apoptosis as it is an early and reversible event in the process.

Flow cytometry has become another valuable tool in apoptosis research because it offers rapid and accurate measurements of cells' constituents and functions. This technique permits scientists to take measurements in many cells in a very short time and also to describe a population of cells, based on one or more particular parameters of interest. Research teams often use flow cytometry to identify and quantify proteins such as Bcl-2/Bax members, which they detect using immunocytochemistry. Flow cytometers require dedicated staff to operate them, but offer the advantage that they can measure several parameters at a time using dyes detected at different wavelengths.

Other types of assay continue to emerge. Alexis, for example, has recently introduced an ADP-ATP kit that can determine the rate at which a cell uses energy. Sigma has just released Panorama™ gene arrays including human and mouse membrane arrays for apoptosis. The arrays include 198 and 450 apoptosis-related genes, respectively, grouped into gene families. "We prepare them with PCR products made from sequence-verified clones," explains Chris Bailey, the company's market segment manager for gene expression and analysis.

Naive and Sophisticated Users

A general trend in the industry is the provision of kits for scientists uninitiated in the complexities of apoptosis. "Many researchers deal with animals, which is difficult," says Wood. "A five percent reduction in optimal conditions can be a disaster. We've geared our new kits to be able to deal with difficult samples. We aim to reduce background to make interpretation much easier for the novice user."

Similarly, several companies now target kits and reagents based on Annexin V at investigators who have had little experience with labeling techniques



specific to apoptosis. The kits enable the scientists to obtain reliable results with their cell systems. "For the unsophisticated user you have to have an experiment in a box that will be successful the first time out and will give the results that they need," says Sorensen.

However, Campos warns that specificity and ease of use tend to fall on opposite sides of the same coin. "You need a sophisticated test to end up with an unambiguous answer specific to the question you ask," he points out. "For example, if you ask whether caspase 3 is active in a particular process, you don't want an answer that says: 'Yes, but caspases 1, 2, and 9 are possibly involved as well.'" Thus BD PharMingen/Transduction Laboratories recently introduced an assay that uniquely quantifies the activity of caspase 3.

In fact several kits now coming onto the market can prove useful for scientists who specialize in apoptosis

by saving them time. "They want to get to the cutting edge as soon as possible," explains Zipkin. "They don't want to spend days or weeks making reagents."

The demand for sophisticated assay products shows no sign of slowing. "We'll see heavier reliance on the whole area of proteomics," predicts Sorensen. "We'll have to develop assays to allow investigators to look at protein-protein interactions in a meaningful way and to map changes on a sequential and real-time basis. Scientists will need functional assays to look at real biological functions that can be modified by drugs. Some of the most important reagents to be developed will be those that select for active complexes or that will work in histochemical reactions."

As new tools become available for research in apoptosis, research teams will use them to discover new pathways and new components in the pathways. That should lead to a better understanding of the interrelationships among the many complex pathways that coexist in cells of living tissue. As fresh facts regarding apoptosis emerge, they will continue to show that the tendrils of death are endless and definitely a critical part of life. ■

Peter Gwynne is a freelance writer based on Cape Cod, Massachusetts, U.S.A. Gary Heebner is president of Cell Associates, a scientific marketing firm in Chesterfield, Missouri, U.S.A.

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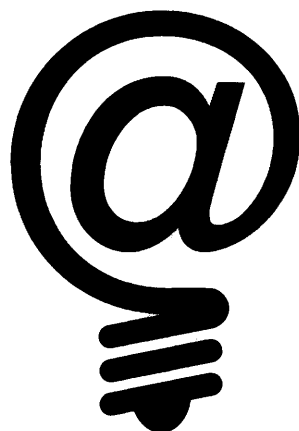
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POSITIONS OPEN

BIOLOGICAL ENGINEERING ASSISTANT PROFESSOR TENURE-TRACK, 12-MONTH POSITION Teaching (50%) and Research (50%) Department of Agricultural and Biological Engineering Cornell University

Starting: 1 January 2001 or as negotiated.

Responsibilities: Develop and sustain a nationally recognized research/teaching program in biological engineering that applies advances in the engineering, biological, and biomedical sciences to the study of living systems. Research program could encompass studies in physiological engineering, cryobiology, cryosurgery, thermal therapy, bioimaging, tissue engineering, organ cultures, and biofluid mechanics. Development of a strong research program supported by external funding is required. Teaching will involve two courses per year that may include a core undergraduate course such as biofluid mechanics, an upper-level undergraduate course in physiological engineering or a variation thereof, and a graduate course in the incumbent's area of expertise. Responsibilities for the position also include mentoring and academic advising of undergraduate and graduate students. The individual will participate in general activities in the Department, College, and the University. Service to the State of New York and society at large through consultation, advisement, and other outreach venues is expected of all faculty members.

Qualifications: Ph.D. in engineering applied to living systems or its equivalent.

Salary: competitive and commensurate with background and experience. Attractive fringe benefits package available.

Cover letter describing qualifications and interest in the position, current and future research interests, teaching interests and experience, curriculum vitae, academic transcripts, and the names and addresses of three references to:

Michael F. Walter, Chair
Department of Agricultural and
Biological Engineering
Riley-Robb Hall, Cornell University
Ithaca, NY 14853-5701
Website: <http://aben.cornell.edu/>

Applications will be reviewed beginning October 15, 2000, and will be accepted until the position is filled. *Cornell University is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR MOLECULAR AND CELLULAR BIOLOGY HARVARD UNIVERSITY

The Department of Molecular and Cellular Biology (MCB) is seeking outstanding candidates for the position of Assistant Professor (entry-level appointment). Our Department covers a broad range of topics including cellular biology, developmental biology, molecular biology, molecular evolution, molecular genetics, neurobiology, and structural biology. We are particularly interested in candidates working in the following areas: neurobiology, cell biological and evolutionary approaches to development, structural biology, genomics, and molecular approaches to understanding gene function.

Applications should include curriculum vitae, reprints of publications, and a statement of present and future research plans (one to three pages). Complete applications and three letters of recommendation solicited by the applicant should be received no later than October 13, 2000. Mail applications to:

Elaine R. Wood
MCB Search Committee
Harvard University
7 Divinity Avenue
Chambridge, MA 02138

Harvard University is an Affirmative Action/Equal Opportunity Employer. We strongly encourage applications from women and minority candidates.

POSITIONS OPEN

DEAN COLLEGE OF NATURAL SCIENCES UNIVERSITY OF NORTHERN IOWA

Applications and nominations are solicited for the position of Dean of the College of Natural Sciences, University of Northern Iowa (website: www.uni.edu). The University, one of three state universities, has approximately 13,500 students, with a full-time faculty of about 650. About 2,000 students are majors in the College of Natural Sciences, which has over 120 full-time faculty members. The Deans of each of the six colleges report to the Vice President/Provost of the University. The Dean provides administrative leadership and support for undergraduate and graduate programs in seven academic departments (Biology, Chemistry, Earth Science, Industrial Technology, Mathematics, Computer Science, and Physics); two interdisciplinary programs (Environmental Science and Science Education); and three centers (Center for Energy and Environmental Education, Metal Casting Center, Recycling and Reuse Technology Transfer Center). Master's degrees are offered through most departments and interdisciplinary programs, and a Doctorate (D.I.T.) is offered in industrial technology.

The towns of Cedar Falls and adjacent Waterloo form an attractive, safe residential community of 110,000 in northeast Iowa. Cedar Falls/Waterloo has outstanding public schools, an excellent park system, 52 miles of bicycle trails, and a symphony that performs at the University's new Performing Arts Center. Further information about the community can be obtained from the following website: www.bio.uni.edu/careers/search/dean.htm.

Starting date: Not later than August 1, 2001.

Qualifications: Applicants must (1) hold an earned Doctorate in a discipline represented in the College; (2) have successful academic administrative experience; (3) have exceptional oral, written, analytical, and interpersonal skills; (4) have a distinguished record in teaching, research, publication, and extramural funding commensurate with a tenured appointment at the level of **FULL PROFESSOR** in a department within the College; (5) be committed to a decentralized participatory management style; and (6) exhibit a strong commitment to a diverse and international academic community. The salary is competitive and commensurate with experience. The University offers excellent fringe benefits, including TIAA/CREF.

Application deadline: Applications received by October 20, 2000, will receive full consideration. Applicants should provide the committee with a letter of application; curriculum vitae; a statement of administrative philosophy; and names, addresses, e-mail addresses, and telephone numbers of four references. Applications will be held in confidence, and references will not be contacted until the candidate has been consulted. Send applications, nominations, and requests for further information to:

Dr. Jill M. Trainer, Chair
Search Committee for College of Natural
Sciences Dean
c/o Office of the Vice President and Provost
University of Northern Iowa
Cedar Falls, IA 50614-0004
Telephone: 319-273-6187; FAX: 319-273-3509
E-mail: jill.trainer@uni.edu

The University of Northern Iowa is an Equal Opportunity Educator and Employer with a comprehensive plan for Affirmative Action. The College encourages applications from minority persons, women, persons with disabilities, and Vietnam-era veterans.

PURIFICATION MANUFACTURING SUPERVISOR wanted by genomic research company in Rockville, Maryland. Must have Master's or equivalent in chemistry or biochemistry engineering plus one year of experience in managing purification operations or in research on purification and recovery bioprocesses (experience gained during degree acceptable). Respond to: **Human Resources Department, Code Number AK001, 9410 Key West Avenue, Rockville, MD 20850-3331.**

CHAIRPERSON

DEPARTMENT OF

COMPUTATIONAL SCIENCES

The Albert Einstein College of Medicine of Yeshiva University solicits applications for the position of Chair of the Department of Computational Sciences. This will be a newly formed university department at the College of Medicine, and will be comprised of new and current full-time faculty at the College of Medicine and part-time faculty from the undergraduate institutions of Yeshiva University.

The successful candidate will be an established investigator with an international reputation in a field of computational science such as bioinformatics, biochemical dynamics, computational neuroscience, complexity theory, or stochastic processes. In addition to leading a major recruitment effort in the formation of the department, the Chair will be expected to facilitate the incorporation of the diverse computational science interests of the faculty into the research environment of the College of Medicine.

Please send a Curriculum Vitae, brief research description, and list of three references who can be contacted to: **Ms. Julie Herrick, Assistant Dean for Research Management, Albert Einstein College of Medicine, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY 10461; herrick@aecom.yu.edu**
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SPECIAL PATHOGENS BRANCH

Division of Viral and Rickettsial Diseases

National Center for Infectious Diseases

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The Centers for Disease Control and Prevention is seeking qualified applicants for Chief of the Special Pathogens Branch (SPB), Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases. The Chief of SPB will provide overall supervision of approximately 50 administrative and technical staff working with a taxonomically diverse group of viral agents (e.g., Filoviruses, Arenaviruses, Bunyaviruses and others) requiring containment and handling within a Biosafety Level 4 (BSL-4) facility. Research in SPB focuses on the diagnosis, epidemiology, pathogenesis, and prevention of disease syndromes associated with these viruses, as well as the molecular characterization of the causative agents. Coordinating responses to outbreaks of disease caused by viruses requiring BSL-4 containment and elucidating transmission cycles of the responsible agents are integral components of the public health and research mission of SPB. Virologists, physicians, or veterinarians with research experience with viral agents requiring BSL-4 containment and experience leading research programs are encouraged to apply.

Qualifications include a doctoral degree, significant scientific accomplishments in one or more areas of relevant research, experience with outbreak investigations or work in developing countries, and experience in developing, directing, and managing a research program. Salary range is \$83,559 to \$157,000 per annum, depending on qualifications.

Further information can be obtained from Dr. James E. Childs, ScD, Chairman, Special Pathogens Branch Search Committee, Mail Stop G13, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, GA 30333; Telephone: (404) 639-1075; FAX: (404) 639-4436; or EMAIL: JFCS@CDC.GOV

Interested candidates should send their curriculum vitae in confidence along with the names of four professional references to **Centers for Disease Control and Prevention, Attention: Ms. Janie L. Oddy, Mailstop C19, 1600 Clifton Road, Atlanta, GA 30333** (or by Email to JLOO@CDC.GOV). The deadline for submission of applications is October 1, 2000.

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FACULTY POSITION

CASE WESTERN RESERVE UNIVERSITY

PHARMACOGENOMICS -

PHARMACOGENETICS

The Department of Pharmacology and the Comprehensive Cancer Center of Case Western Reserve University and University Hospitals of Cleveland are seeking faculty with expertise in pharmacogenomics or pharmacogenetics to join our interdisciplinary program in Hormone Responsive Malignancies. The appointments are in the tenure track (Assistant or Associate Professor) in the Department of Pharmacology. Qualified applicants are expected to have experience in at least one area of functional genomics such as gene expression profiling with microarrays, genome scanning for SNPs or proteomics. We are especially interested in animal models of drug variability, especially those related to hormone responsive cancers. Interested applicants should send a curriculum vitae, a brief description of research interests, and names of three references to: Christine Rhoads, Cancer Center, 11100 Euclid Avenue, Cleveland, OH 44106-5065.



CASE WESTERN RESERVE UNIVERSITY

In employment and education, Case Western Reserve University is committed to affirmative action and equal opportunity.



Avigen, Inc. is a leader in the development of gene therapy based on adeno-associated virus (AAV) for the treatment of inherited & acquired diseases. Our continued growth has created the following openings in our Alameda, CA facility for experienced and self-motivated professionals to join our expanding Team.

BUSINESS DEVELOPMENT MANAGER

Exciting opportunity for the right individual to be responsible for analyzing and assessing potential business opportunities. In conjunction with senior management, will evaluate technologies and make recommendations based on risk, market potential, and other business considerations. Will also be responsible for developing licensing objectives and assist in licensing negotiations. Minimum requirements are a strong scientific background, preferably Ph.D. level, experience with licenses and technical assessments. Some travel required.

PATENT AGENT/SPECIALIST

This individual will work with Avigen's scientific staff and legal team to prepare patent applications, contribute to Avigen's patent strategy and prosecution, and conduct state-of-the-art searches. A Ph.D. with a strong molecular biology background is required. Registration with the U.S. Patent Office is preferred, but we will consider training the right individual, including training for the Patent Bar Examination.

SCIENTIST/GROUP LEADER - AAV VECTOR CORE FACILITY

To support Avigen's expanding Research and Development activities, we are seeking a key individual to lead a Core Vector Production/Testing Facility with the mandate to provide purified AAV vectors for in vitro and in vivo studies. The successful candidate must have a PhD degree in a relevant scientific discipline, 5+ years experience with virus / viral vector production (cell culture, vector purification) and characterization, and relevant supervisory experience. This individual will lead a group consisting of a minimum of 6 Development Associates, report to the Director of Development, and will interact closely and knowledgeably with R&D scientific staff and external collaborators.

FORMULATION SCIENTIST

As part of an ongoing expansion of our Development Group, we are seeking a highly qualified scientist to fill a key role in the development of recombinant AAV vectors for human clinical trials. The successful candidate will have a strong background in the optimization of formulation and stability of biotechnology products, ideally viral vectors. A good working knowledge of relevant FDA regulations and cGMP required. Experience in vector purification process optimization and scale-up a plus. Candidates must have a PhD, 3+ years of relevant experience, and excellent communication skills.

PHARMACOLOGY/TOXICOLOGY SCIENTIST

Seeking a pharmacologist/toxicologist to design, coordinate, monitor, and evaluate GLP toxicity and biodistribution studies in support of the clinical evaluation and registration of AAV based gene therapy products. Position requires PhD in toxicology with 2+ years of industrial experience in in vivo toxicology testing. Experience with biological and viral based products preferred.

DEVELOPMENT ASSOCIATES

We are seeking experienced Development Associates to play key roles in a core facility for AAV vector production and characterization. A background in virology / viral vectors, and experience in cell culture and virus purification required. Candidates must have a BSc or MSc degree, and 3+ years relevant experience. Industry / cGMP experience a plus. (No relocation is authorized for these positions.)

QUALITY ASSURANCE SPECIALIST

We are seeking a QA professional, a detail-oriented individual familiar with team interactions and excellent, demonstrated communication skills. Responsibilities will include: working with us to ensure compliance to cGMP in our new facility, review of Batch Production records and supporting data, investigation reports and change control/corrective action closure activities. Join us and we will provide a supportive management team and an opportunity to work in the cutting-edge field of gene therapy.

To join our team, you will need to offer these relevant qualifications:

- BS in an appropriate scientific discipline and 3-5 years experience in the pharmaceutical or bio-pharmaceutical industry
- Working experience in, and knowledge of, Quality Systems
- Proven detailed data and Batch Production Record review experience
- Administration of change control and deviation systems
- Expertise in compliance oversight and training is desirable
- Excellent written and verbal communication skills
- Ability to work effectively under time pressure

(No relocation is authorized for this position.)

QUALITY CONTROL ANALYST I

Recent graduates with a degree in microbiology, biochemistry and biology are encouraged to apply for entry-level opportunities in the Biotechnology Industry. You will have an opportunity to learn cGMP and Quality Control. Responsibilities include performing microbiological and chemical QC testing for raw materials, in-process and final products. Requires: 1-2 years biotech/pharmaceutical work experience; and familiarity with microbiology, bioburden, environmental and water monitoring, LAL, SDS-PAGE/Western, ELISA, aseptic technique, and GLP/cGMP. Bacteria ID experience a plus. An organized, detail-oriented professional with excellent teamwork skills is ideal. (No relocation is authorized for this position.)

SENIOR RESEARCH ASSOCIATE—MANUFACTURING

Opportunity for an experienced individual to have a leading role in providing experience on DNA plasmid production and quality issues to the Production Department. This person will also be a hands-on member of the GMP manufacturing team. Requires a strong molecular biology background; E. coli fermentation, plasmid purification, GMP experience, and cell culture experience are all highly desired. BS/MS with 5-8 years relevant experience or equivalent are required. (No relocation is authorized for this position.) We offer competitive salaries, benefits paid in full by the Company, stock options, 401(k), growth potential and an exciting opportunity to work with a dynamic team focused on exploring the impact of gene therapy on selected human diseases.

To apply, email/send/fax resume, **SPECIFYING POSITION OF INTEREST**, to: **Avigen, Inc., Human Resources, 1201 Harbor Bay Parkway, Suite 1000, Alameda, CA 94502; e-mail: sdelph@avigen.com, fax: (510) 748-7155. EOE - Principals Only - NO CALLS.**



School of Biology

Georgia Tech has embarked on an Institute-wide expansion in the biological sciences. The School of Biology has entered a new growth phase that has created extraordinary opportunities in cell and molecular biology and bioinformatics. The School is recruiting for several faculty positions and three endowed professorships.

Endowed Professorships

Nominations and applications are invited from individuals with international prominence for the following endowed professorships.

Smithgall Chair in **Molecular Cell Biology** in areas such as signal transduction, gene regulation, or organization and dynamics of sub-cellular structures.

Endowed Professorship in **Bioinformatics** is being established in areas such as the analysis of protein/nucleic acid sequence and structure, comparative genomics, or network analysis of molecular interactions.

Endowed Professorship in **Genome Biology** is being established in areas such as proteomics, gene expression profiling, microarray analysis, or SNP detection and analysis.

The holders of these professorships are expected to conduct vigorous research programs, provide leadership in faculty recruitment, and participate in undergraduate and graduate educational programs.

Nominations and applications should be sent to:

Endowed Professorships Search Committee
School of Biology
Georgia Institute of Technology
Atlanta, GA 30332-0230

For more information contact: Professors Terry W. Snell (terry.snell@biology.gatech.edu) or Loren D. Williams (loren.williams@chemistry.gatech.edu).

Faculty Positions

Appointments in **Molecular Cell Biology** are anticipated at the levels of assistant to full professor. Candidates will be expected to develop innovative, funded research programs, and teach in the undergraduate and graduate programs. Candidates with research interests in areas such as signal transduction, gene regulation, cell differentiation, membrane trafficking, or organization and dynamics of sub-cellular structures are encouraged to apply.

Applicants should provide a curriculum vitae, a letter describing research and teaching interests, and arrange to have three letters of reference sent. Review will begin October 31 and will continue until positions are filled. Applications should be sent to:

Molecular Cell Biology Search Committee
School of Biology
Georgia Institute of Technology
Atlanta GA 30332-0230

For more information see <http://www.biology.gatech.edu>

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MAYO CLINIC DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS

A Mayo Clinic postdoctoral research position is available to study the molecular and physiological properties of peripheral autonomic ganglion neurons with special emphasis on sympathetic prevertebral ganglion neurons. Patch clamp recordings, sharp microelectrode recordings, laser scanning confocal microscopy and 3-D volume reconstruction are some of the approaches emphasized. Candidates with experience in the above mentioned methods are preferred. Candidates must have an MD or PhD degree. Please send curriculum vitae and the names of three references to:

J.H. Szurszewski, Ph.D.
Department of Physiology and Biophysics
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200 First Street, SW
Rochester, MN 55905, USA
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Faculty Position In Aging

The Molecular Biology Program of Memorial Sloan-Kettering Cancer Center invites applications for a tenure-track faculty position. The successful candidate will be expected to establish a vigorous research program that probes the fundamental biological mechanisms underlying aging and tissue stability. Topics of interest include all aspects of the maintenance of genomic integrity, genetic control of tissue structure, and the regulation of cell death.

MSK offers an outstanding research environment and support infrastructure. Appointment at any level will be considered. Interested parties should forward their Curriculum Vitae, a description of their past research accomplishments and proposed research program, selected reprints, and either three letters of recommendation (for Assistant Member appointments) or a list of potential references (for Associate and Full Member appointments) to: Aging Search, Ms. Linda Z. Smith, Box 150, Memorial Sloan-Kettering Cancer Center, 1275 York Ave, New York, New York 10021. Application submission may also be via e-mail to: lsmith@ski.mskcc.org as either a Microsoft Word or pdf file. Recommendation letters should be forwarded by post. Inquires to either Ms. Smith or Dr. Kenneth Mariani, Chairman, Molecular Biology Program, Memorial Sloan-Kettering Cancer Center, e-mail: k-marian@ski.mskcc.org. Application deadline is November 1, 2000. EOE/AA



**Memorial Sloan-Kettering
Cancer Center**



The University of Delaware seeks nominations and applications for three appointments, rank open, in the Delaware Biotechnology Institute (DBI) and within one or more academic departments at the University. Exceptionally qualified candidates could be considered for the Edward G. Jefferson endowed chair, who is expected to provide energetic leadership and direction in furthering the DBI's position at the forefront of research and education in biotechnology.

Candidates should hold a Ph.D. in molecular cell biology, chemistry, biochemistry, or closely related fields, and should be involved in one of two general areas of research:

(1) Research in the broadly defined area of comparative protein biology (proteomics) involving the simultaneous analysis of all differentially expressed proteins in organisms, tissues, cells or organelles under varying physiological conditions, with required expertise in 2D-gel-phase protein separations and high-throughput protein analysis including de novo peptide sequencing by mass spectroscopy, or

(2) Research using x-ray crystallography and/or NMR in the broadly defined area of structural genomics involving an understanding of protein structural families, metabolic pathways, structural folds and the relationship of structure and function.

Senior-level candidates will possess a distinguished record of scientific accomplishments and be recognized as leaders in the field in which they work. Demonstrated experience in leading interdisciplinary research teams, in developing strong, externally funded research programs, and in stimulating the work of others is highly desirable.

The three new positions will interface closely with a significant effort already in place in the departments of Chemistry and Biochemistry, Plant and Soil Sciences, Biological Sciences, and Chemical Engineering. This work encompasses proteomics, enzymology, bio-organic chemistry, structural biology and biochemistry and the chemical engineering aspects of intercellular production of proteins. The Department of Chemistry and Biochemistry is home to an NIH-supported Chemistry-Biology Interface Program and an NSF-supported GOALI program in mass spectroscopy with major instrumentation (high-resolution NMR, mass spectroscopy, and protein sequencing and crystallography), well-equipped shops, substantial computational facilities and experienced support staff.

The University of Delaware, founded in 1743, is one of the oldest land-grant institutions in the nation, one of the 19 sea-grant institutions, and one of only 13 space-grant institutions. Located in the heart of a region populated by leading chemical and life science-focused companies such as DuPont, AstraZeneca and Hercules, it is a major state-assisted, private university, with nationally recognized research and educational programs supported by state-of-the-art laboratories, an expansive library, and an existing and expanding infrastructure for biotechnology research. Infrastructure details can be found on the University's Web site www.udel.edu.

The Delaware Biotechnology Institute is a partnership involving state government, the Delaware institutions of higher education, and area industry. The mission of the Institute is to engage in leading-edge scientific discovery in the life sciences, provide biotechnology-based education, and promote economic development and the creation of high-quality jobs. A new 70,000 sq. ft. state-of-the-art research facility is under construction to house interdisciplinary DBI research staff encompassing molecular biology, genetics/genomics, proteomics/structural biology, computational biology/computer science, modeling and simulation. The DBI research staff will be supported by an infrastructure including high-field NMR, state-of-the-art mass spectroscopy, bioimaging, a plant growth center and a computing center. The DBI research staff will carry appointments in comparable disciplines in the University. For more information on the Delaware Biotechnology Institute, visit www.dbi.udel.edu

Candidate reviews will begin at once and will continue until the positions are filled. Interested candidates should forward a letter of application, full curriculum vitae, and the names and contact information for four references to:

**Steven D. Brown, Chair, DBI Search,
University of Delaware,
c/o Engineering Outreach,
200 Academy St., Rm. 205,
Newark, DE 19716-3101.**

The University of Delaware is an equal opportunity employer that encourages applications from minority group members and women.

THYMIC REPERTOIRE GENERATION INFECTIOUS DISEASE/CANCER VACCINES

The **Molecular Immunology Foundation** in conjunction with **Harvard Medical School** and **Dana-Farber Cancer Institute** is developing a new form of vaccination technology through analysis of the basis of immune recognition. Recent advances in structural biology, molecular immunology, and functional genomics/proteomics offer the potential to combat deadly infectious agents and cancers by altering the thymic repertoire. Outstanding PhD scientists from the post-doctoral to independent senior levels are needed with expertise in the following areas:



Cellular Immunology: murine immunology with transgenic, knockout and normal mice, functional analysis in vitro and in vivo, FACS analysis, FTOC, animal breeding, genotyping

Molecular Modeling: protein structure, 3D protein comparison, homology model building, unix-based systems and msi-based computers

Informatics: genomic analysis to probe epitope determination, threading analysis, development of search engine motifs, mass spectrometry data interfacing with genomic libraries, new data bases

Prokaryotic Expression/Biochemistry: molecular cloning, pcr, protein expression, HPLC and FPLC, affinity purification, SDS-PAGE, protein assays

Mass Spectroscopy: protein MS, including maldi-tof and ion trap to identify peptides bound to defined MHC molecules; ms data base programs

Qualified applicants with 3-5 years of experience send resume to:

Professor Ellis L. Reinherz
c/o Dana-Farber Cancer Institute
44 Binney Street
Boston, MA 02115

Fax: 617.632.3351

E-mail: ellis_reinherz@dfci.harvard.edu

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS
NEWARK

NJIT
New Jersey Institute of Technology

THE FEDERATED DEPARTMENT OF BIOLOGICAL SCIENCES SEEKS TO FILL TWO TENURE-TRACK POSITIONS AT THE ASSISTANT OR ASSOCIATE PROFESSOR LEVEL

CELL BIOLOGIST with a research program on cell motility and the cytoskeleton including but not limited to molecular motors, cytoskeletal dynamics, cell signaling-cytoskeletal interactions and /or cytoskeletal aspects of development.

CELLULAR (NEURO) IMMUNOLOGIST with interests in cytokine gene regulation and/or signal transduction particularly as it relates to neuroimmunological responses to CNS trauma and/or neurodegenerative disease.

Candidates must have a Ph.D., at least two years of postdoctoral training, and a record of published research. They must show potential for developing and sustaining an independently funded research program.

Applicants should submit a letter of application, curriculum vitae, a statement of research and teaching interests and have three professional reference letters sent to:

Dr. G. Miller Jonakait,
Chair, Department of Biological Sciences,
Rutgers University, 101 Warren Street, Newark, NJ 07102
Closing date is October 27, 2000
or until a qualified candidate is identified.
<http://biology-newark.rutgers.edu>



The University of Texas at Austin

Faculty Position in Signal Transduction Molecular Cell and Developmental Biology The Institute for Cellular and Molecular Biology

A faculty position is open for an outstanding scientist studying signal transduction in an animal, fungal or plant system. While we are primarily interested in candidates at the Assistant Professor level, exceptional candidates at any level will be considered. The successful candidate will be expected to build a vigorous and well-funded research program and to contribute to the school's teaching mission. A competitive start-up package and salary are available. The Institute for Cellular and Molecular Biology provides state-of-the-art facilities for cell and molecular biology.

The molecular biology community at The University of Texas at Austin is in an exciting phase of rapid growth with recent hires in the areas of developmental biology, plant biology, neurobiology, genomics, virology, biochemistry and structural biology. Austin, located on the edge of the Texas Hill Country, is widely recognized as one of America's most attractive and liveable cities.

Applications will be considered from October 15 until the time the position is filled. To apply please send curriculum vitae, a brief statement of research interests and representative publications, and have at least three letters of recommendation sent to:

Dr. Klaus Kalthoff
Chairman, Section of Molecular Cell and Developmental Biology
BIO 311
The University of Texas at Austin
Austin, TX 78712-1095

Homepages • <http://www.biosci.utexas.edu/mgm> and <http://www.icmb.utexas.edu>
The University of Texas at Austin is an Equal Opportunity Employer.
Qualified women and minorities are encouraged to apply.

**NATIONAL INSTITUTES OF HEALTH
NATIONAL INSTITUTE OF ALLERGY
AND INFECTIOUS DISEASES
POSTDOCTORAL RESEARCH
POSITION**

**Starting Salary Range: \$31,000
Commensurate with experience/
present salary**

A post-doctoral position is available in fall 2000 for molecular studies on rotaviruses, agents with segmented double-stranded RNA genomes that are the primary cause of acute diarrhea in infants and young children. Research projects include describing the mechanism of genome packaging and replication, including the role that viral proteins play in these processes and the development of a reverse genetics system. Applicants should have a strong background in virology, molecular biology or biochemistry and hold a Ph.D. or M.D. degree. Salary begins at \$31,000 and increases depending on experience. Please send curriculum vitae and the names of three references to:

**Dr. John T. Patton
Laboratory of Infectious Diseases,
NIAID
Bldg. 7, Room 117
7 Center Drive, MSC 0720
Bethesda, MD 20892
FAX: (301) 496-8312
E-mail: jpatton@niaid.nih.gov**

NIH is an Equal Opportunity Employer



**shell: (shĕl), n. outer part
of an operating system
that provides access to
internal software.**



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& Engineering**

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Our researchers and computer scientists use supercomputers to expand knowledge of automotive design, chemical reactions, earth and weather, and the human body.

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National Laboratory**

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U. S. Department of Energy

www.pnl.gov/cse/ ♦ inquiry@pnl.gov
1-509-376-7966

PNNL is an EEO/AA employer and supports diversity in the workplace. F/M/D/V are encouraged to apply.

CAREERS MAYO

Research Technologist

PLEASE REFER TO JOB POSTING #00-3132.SCI

Mayo Clinic is an affirmative action and equal opportunity educator and employer.

Mayo Clinic in Rochester, Minnesota currently has opportunities for Technologists to operate a new GMP vector production facility established to support preclinical and phase I clinical gene therapy studies. A range of different viral and non-viral vectors will be produced in the facility.

Candidates must have three to ten years experience and expertise in two or more of the following areas: generation and use of viral gene transfer vectors, GMP production of biologics, quality control of biologics, documentation systems/controls, process development for large scale tissue and virus culture, process development for large scale purification of biologics. For more information about the Molecular Medicine Program, visit our web site at: www.mayo.edu/research/mmp/.

As a leader in healthcare, Mayo Clinic offers an excellent salary and benefits package. Please submit resume to:



**Mayo Clinic
Jill Kelly, Human Resources, OE-4
200 1st Street SW, Rochester, MN 55905**

Mayo Clinic uses optical scanning technology. Please use a 12 point font in your resume with minimal use of bullets, italics, underlining and bolding.

fax 507-538-1295 e-mail careers@mayo.edu www.mayo.edu

Director, Division of Extramural Activities

**National Institute of Diabetes and Digestive and Kidney Disease
(NIDDK) National Institutes of Health (NIH)**

Incumbent serves as principal advisor to the Institute Director, extramural Division Directors, and NIH extramural leadership regarding the Institute's extramural activities. S/he is responsible for the development, dissemination, and implementation of extramural review and management policies for the Institute. Incumbent is the Institute's principal staff officer for extramural review and management policy and is also responsible for coordinating a broad range of activities and functions to assure sound and efficient management of the Institute's extramural support program.

Incumbent is responsible for the assignment of all grant applications to the appropriate program division. Assists in the resolution of problems of jurisdictional areas of research. Provides guidance on daily operational review and management issues and problems of the research programs. Acts in a consultative capacity to the four Division Directors involving grant administration, including those mechanisms of support, review, award and management. Oversees grants management and research contract program administration.

Applicants must have a Ph.D. or M.D. degree and also must have demonstrated scientific leadership and a broad knowledge of the biomedical research grant process as it pertains to extramural review and administrative management policies. Total salary is competitive and will be commensurate with the experience of the selectee.

Please submit current curriculum vitae to the attention of:

**Mr. L. Earl Laurence
Deputy Director for Management and Operations,
NIDDK and Search Committee Chair
C/o Ms. Thomascene White
Office of Human Resource Management
Building 31, Room 9A30, 31 Center Dr. MSC 2560
Bethesda, Maryland 20892-2560
Tele: (301) 496-4231 / Fax: (301) 402-3951**

**Applications must be postmarked by
September 25, 2000, and received by close
of business September 29, 2000.**



NIH IS AN EQUAL OPPORTUNITY EMPLOYER



Metabasis Therapeutics, Inc., is a San Diego-based biopharmaceutical company seeking exceptionally talented and highly motivated scientists with good communication skills to join our multi-disciplinary group focused on the discovery of drugs targeting important metabolic pathways. Currently we have the following open positions:

Biochemistry Associates and Pharmacology Associates

A BS or MS degree in Biochemistry (or Biological Sciences for the Pharm. position) with 1-3 years of laboratory research experience in 2 or more of the following areas are required: enzymology (purification, characterization & kinetic analysis), HPLC analysis, cell culture, in vivo pharmacology/drug metabolism, in vitro pharmacology, histology, biochemical assays. Responsibilities will include in vitro and in vivo assay development, and profiling drugs at the enzyme, receptor, cellular, and in vivo level. Computer competency with Excel spreadsheets and scientific graphing packages is highly desirable.

Research Scientist, Cell Biology

The position requires a Ph.D. in Biochemistry, Cell Biology, or related field and 1-3 years of relevant postdoctoral experience. The successful applicant will be involved with the development and establishment of novel cellular assays and the identification of new leads. Research experience in cellular metabolism and/or cell signaling is essential. Preference will be given to candidates with previous experience in the antiviral and/or oncolytic drug discovery fields.

Pharmacologist/Physiologist

A Ph.D. in Pharmacology or Physiology with 1 - 3 years of postdoctoral research experience is required. The successful candidate will be responsible for evaluating novel therapeutic approaches to treating chronic liver diseases. Experience with experimental models of liver injury and significant knowledge of liver physiology and pathology are required. A proven record of research productivity as well as authorship of quality publications is expected.

Postdoctoral Research Scientist

A Ph.D. in Pharmacology or Physiology is required. The successful candidate will be conducting experimental research to evaluate novel therapeutic approaches for treating liver fibrosis. A strong research background and interest in liver biology is essential.

We are an equal opportunity employer offering a competitive compensation package including a stock option program & comprehensive benefits, in a fast-paced, highly stimulating, team-oriented environment. Qualified applicants are invited to submit a CV and cover letter to: **Metabasis Therapeutics, Inc., Research & Development, 9390 Towne Centre Dr., San Diego, CA 92121; Fax: 858-458-3504; email: jobs@mbasis.com**

UAB THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Department of Cell Biology

The Department of Cell Biology in the Schools of Medicine and Dentistry at UAB invites applications for fulltime, tenure track positions at the **ASSISTANT, ASSOCIATE or FULL PROFESSOR** level. Competitive applicants will have a Ph.D. or equivalent degree, postdoctoral experience, and clear evidence of research productivity, creativity, and independence. As the Department is committed to building an outstanding faculty with research expertise in both **cell and developmental biology**, applicants investigating fundamental problems in either of these areas will be considered. Successful candidates will be expected to develop a strong extramurally funded research program, to participate in the training of Ph.D. candidates, and to contribute to departmental responsibilities associated with graduate and professional student teaching. UAB offers a highly interactive environment with state-of-the-art research facilities. The Medical School and the Department are each ranked in the top 20 in NIH research funding. The presence of multidisciplinary research centers and an interdepartmental Graduate Program in Cell and Molecular Biology fosters collaboration among the basic science and clinical faculty. Salaries and start-up funds are highly competitive and commensurate with qualifications and experience. Applications, including the names of three references, a current curriculum vitae, and a summary of past accomplishments and future research plans, should be sent by November 15, 2000 to:

Dr. Douglas M. Cyr
Department of Cell Biology
The University of Alabama at Birmingham
Birmingham, AL 35294-0005

The University of Alabama at Birmingham is an Equal Opportunity/Affirmative Action Employer.



UNIVERSITY OF FLORIDA

SENIOR FACULTY POSITION IN BIOLOGICAL NMR

The University of Florida Department of Biochemistry & Molecular Biology, the McKnight Brain Institute (MBI-UF), and the College of Medicine are seeking an outstanding scientist for a tenure-track faculty position at the **ASSOCIATE or FULL PROFESSOR** level in the field of biological solution state NMR. In conjunction with the National High Magnetic Field Laboratory (NHMFL), the MBI-UF has created an Advanced Magnetic Resonance Imaging and Spectroscopy (AMRIS) facility with support staff and facilities, and several state-of-the-art spectroscopy and imaging systems, including a 750 MHz/17.6T/89mm, a 600 MHz/14.1T/52mm, a 500 MHz/11.7T/52mm, a 200MHz/4.7T/33cm, and a 500MHz/11.7T/40 cm bore spectrometer. All of these systems plus a wealth of other cores, including X-ray crystallography, SGI-supercomputers, optical microscopy, and molecular biology are described at <http://www.ufbi.ufl.edu> and will be available to the successful candidate, who will join an enthusiastic group of faculty with research interests in the structural biology of neuropeptides and proteins, single cell and tissue slice imaging, and spinal cord and brain imaging in animals. The AMRIS facility and associated laboratory and office space are located in the MBI-UF building, and candidates with neuroscience interests are especially encouraged to apply (although all qualified candidates will be considered seriously). The successful candidate will also become a member of the NHMFL and, as such, gain ready access to additional NMR instrumentation.

Applicants should have a Ph.D. or comparable degree with postdoctoral experience and an established and productive research program. The salary range will be negotiable and commensurate with experience. Please send a curriculum vitae, three letters of reference, and a short description of future research plans to: **Distinguished Professor Ben Dunn, Chair, NMR Search Committee, PO Box 100245, Department of Biochemistry & Molecular Biology, University of Florida, Gainesville, FL 32610-0245**

The completed application should be received by November 1, 2000, with an anticipated start date on or after May 1, 2001. *The University of Florida is an EEO/AA institution.*



**MAYO CLINIC
MAYO CANCER CENTER
AND
GASTROENTEROLOGY
RESEARCH UNIT**

Postdoctoral positions in Pancreatic Development and Pancreatic Cancer are immediately available for outstanding individuals to participate in an intensive collaborative effort among cell biologists, biochemists, molecular biologists, and structural biologists to understand molecular mechanism underlying the control of pancreatic cell morphogenesis and its alterations during pancreatic cancer development. Projects will use *in vitro* studies, transgenic and knock out animal models for pancreatic morphogenesis and transformation as well as molecular studies using human pancreatic cancer tissue. The research environment at the GI Research Unit and Mayo Cancer Center offers an excellent opportunity for training and career development in basic science linked to a unique clinical setting for disease-oriented translational research. Strong experience in biochemistry, molecular, and/or structural biology is required.

Specific projects include:

1. Role of pancreatic transcription factors in gene expression, morphogenesis, and neoplastic transformation.
2. Structural biology and molecular modeling approaches for characterizing the DNA binding and transcriptional repressor activities of novel Sp1-like transcription factors.
3. Animal models for molecular studies on pancreatic development and cancer.
4. Expression and mutational profiling of pre-neoplastic lesions in human pancreatic cancer.

Please forward a curriculum vitae, a description of research experience and three references to:

Raul Urrutia, M.D.
GI Research Unit, Alfred 2-435
Mayo Clinic
200 First Street SW
Rochester, MN 55905
Fax: 507-255-6318
E-mail: urrutia.raul@mayo.edu

*Mayo Foundation is an Affirmative
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and Educator.*

DO SOME GOOD (science)

We seek experienced and motivated scientists to develop products that improve healthcare. With an emphasis on teamwork, creativity, and intellectual achievement, we are dedicated to providing a challenging and stimulating work environment, and a generous salary/benefits package.

You should be an energetic self-starter with well-documented productivity and integrity; strong organizational, interpersonal, and communication skills required.

DIRECTOR OF R&D (job code: DS900)

You should have successfully managed all stages of *in vitro* diagnostic immunoassay/instrumentation development and commercialization, including R&D, regulatory, manufacturing. Role includes: strategic planning, supervising multiple teams, representing company, financial reporting, managing IP & licensing, attracting & managing contracts and alliances. Ph.D., ≥12 yr in industry.

SR. SCI. / SCIENTISTS (job code: SS900)

You should have proven abilities in conceptualizing, developing, optimizing and troubleshooting new diagnostic immunoassays. Sr. Scientists must have solid team leadership & project management abilities, and must have demonstrated excellence in product development for infectious disease immunoassays in industry. Ph.D. + postdoc.

Genomic Profiling Systems
is an exciting, well-financed, Cambridge-based start-up company with breakthrough technology for producing a new generation of tools that promise to revolutionize infectious disease diagnostics.

Please submit a resume, one page cover letter, and contact information for 3 references (specifying relationship) to:

Job Code
Genomic Profiling Systems, Inc.
840 Memorial Drive, 4th Fl
Cambridge, MA 02139

Or FAX to: 617 547-6060

Or email (text or attached MS Word file) to:

jobs@genprosyst.com

(include last name & job code in BOTH the subj. line of email AND attached filename)

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Ph.D./M.D. Scientists

Neuropharmacology/Neurophysiology

Enhancing and preserving the quality of life. This is the commitment that Merck & Co., Inc., stands on and it's what has distinguished us as the world's leading research-driven health products company. Recently ranked by Fortune among "America's Most Admired Companies," we discover, develop and manufacture a wide range of innovative products. We currently have an exceptional career opportunity available at our research laboratory in West Point, PA.

We are seeking Ph.D.s with experience in *in vivo* neuropharmacology/neurophysiology and a minimum of 2-4 years' relevant postdoctoral or industrial experience to join an expanding multidisciplinary team studying basic mechanisms and novel therapeutic approaches in the areas of analgesia, migraine, neurodegeneration and psychotherapeutics. Leadership and demonstrated expertise in the establishment and use of behavioral animal models, particularly those relevant to analgesia, as well as *in vivo* neuroelectrophysiological recording experience are highly desired.

We offer an excellent salary and comprehensive benefits program, including tuition reimbursement and one of the best 401(k) plans in the nation, as well as opportunities for personal growth. Please submit your resume, official transcript, the names of 3 references, and a cover letter indicating salary requirements and your position of interest, to: **Merck Positions, PAF Code: XHXMRS MKH08250, P.O. Box 92164, Los Angeles, CA 90009-2164. E-mail: merck@resume.isearch.com Fax: (310) 337-3393.** Only candidates considered for interviews will receive responses. No phone or agency calls please.



We are an equal opportunity employer, m/f/d/v.

**FACULTY POSITIONS
MOLECULAR NEUROSCIENCE
THE UNIVERSITY OF IOWA**

The Department of Physiology and Biophysics invites applications for one or more tenure-track faculty positions in the area of molecular neuroscience. Neuroscience at The University of Iowa is committed to continuous growth that builds on strengths in gene therapy, neurodegenerative disorders, and neurogenetics. The Department has programs of excellence in molecular, cellular, and integrative physiology and participates in interdisciplinary research centers and programs throughout the University. Applicants who complement current departmental research in gene regulation and development, signal transduction, and membrane function are especially encouraged to apply. Applicants must have a Ph.D. and/or M.D. degree, at least two years of relevant postdoctoral training and a strong record of research accomplishment supported by publication. Excellent salary and start up support is provided. For more information, see www.physiology.uiowa.edu.

To apply, send a curriculum vitae, statement of research plans, representative publications and three letters of reference to: **Neuroscience Search Committee, Department of Physiology and Biophysics, University of Iowa College of Medicine, Iowa City, IA 52242-1109** or email to neurosearch@physiology.uiowa.edu.

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



**Endowed Chair in Animal
Genomics
University of Missouri-Columbia**

The Department of Animal Sciences at the University of Missouri-Columbia invites applications for the Wurdack Endowed Chair in Animal Genomics. The University recognizes that a more complete understanding of the genomes of agriculturally important species will underpin most advances in agriculture. Future research in animal agriculture, in particular, will take advantage of, and build on, the information available through the human genome program. Comparative genome mapping, the definition of genes and alleles for quantitatively important traits, broad assessments of gene expression, and new gene discovery will play increasingly important roles in animal nutrition, reproduction and health. Candidates for the Endowed Chair should be individuals who are internationally recognized in the genetics of one or more of the food animal species and who have a strong orientation in molecular biology. They should have a record of strong leadership, outstanding research, and excellence in teaching. The precise area of research is less important than the overall strengths of the candidate. The position will be in the Department of Animal Sciences within the College of Agriculture, Food and Natural Resources. There will be opportunities for joint appointments in other departments. Salary, start-up funds, continued support, facilities and opportunities for collaboration will be excellent. A nomination or application should be accompanied by a curriculum vitae, the names of at least five individuals who might act as references, and a letter supporting the nominee or expressing interest in the position. Review of applications will begin on October 16, 2000 and continue until the position is filled. Send applications or nominations to: **Dr. William R. Lamberson, University of Missouri-Columbia, Animal Sciences Department, 159 Animal Sciences Center, Columbia, MO 65211-5300** (telephone: 573/882-8234; fax: 573/884-7827; e-mail: lambersonw@missouri.edu). *Faculty and staff in the College of Agriculture, Food and Natural Resources are committed to cultural diversity and nondiscrimination toward all people with regard to race, color, religion, national origin, ancestry, gender, age, veteran status and sexual orientation. The University of Missouri is an Equal Opportunity/Affirmative Action Employer and specifically invites and encourages applications from qualified women and minorities.*



**The University of Texas
at Austin**

**Faculty Position
Molecular Genetics and Microbiology and
The Institute for Cellular and Molecular Biology**

The Section of Molecular Genetics and Microbiology at The University of Texas at Austin, in partnership with the Institute for Cellular and Molecular Biology, invites applicants for a tenure-track faculty position at the Assistant Professor level. A second position may become available. We are a scientifically diverse faculty working in both prokaryotic and eukaryotic systems and are especially interested in applicants in the areas of molecular genetics, molecular pathogenesis, transcription, genomics, signal transduction and nucleic acid-protein interactions. Outstanding applicants in other areas and at more senior levels will also be considered. The position offered is highly competitive with regard to start-up funds, salary and laboratory space. Applications received prior to November 15, 2000 will be considered first.

Austin, located on the eastern edge of the Texas Hill Country, is widely recognized as one of America's most attractive and liveable cities.

Please send curriculum vitae, list of publications, a short (1-2 page) research plan, and three letters of recommendation to:

**Dr. Paul D. Gottlieb
Section of Molecular Genetics and Microbiology and
The Institute for Cellular and Molecular Biology
The University of Texas at Austin
Austin, TX 78712-1095**

Homepages • <http://www.biosci.utexas.edu/mgm> and <http://www.icmb.utexas.edu>
*The University of Texas at Austin is an Equal Opportunity Employer.
Qualified women and minorities are encouraged to apply.*

LEHIGH



University

**DEPARTMENT OF BIOLOGICAL SCIENCES
TWO TENURE-TRACK POSITIONS**

Applications are invited for two tenure-track faculty positions. These represent the first step in a major initiative to expand biological sciences and biotechnology. Successful candidates will have strong records of scholarly productivity, the ability to generate extramural funding, and a commitment to instructional excellence at the undergraduate and graduate levels.

MOLECULAR NEUROBIOLOGIST – Assistant or Associate Professor. Individuals studying fundamental questions in molecular, cellular, and/or developmental biology of the nervous system are encouraged to apply to **Prof. M. Kuchka, Chair, Molecular Neurobiology Search Committee.**

INTEGRATIVE SYSTEMS PHYSIOLOGIST – Assistant Professor. Organismal biologists using state-of-the-art techniques to study physiology and behavior within an evolutionary/ecological/environmental context are encouraged to apply to **Prof. J. E. Schneider, Chair, Integrative Systems Physiology Search Committee.**

Send curriculum vitae, a description of research plans and teaching interests, and four letters of reference to the appropriate search committee chairs at the **Dept. of Biological Sciences, 111 Research Drive, Lehigh University, Bethlehem, PA 18015**. Deadline for submission is Nov. 1, 2000. Additional information may be obtained from our Web site - <http://www.lehigh.edu/~inbios>.

Lehigh University is an AA/EO employer and is committed to recruiting and retaining women and minorities.

**Project Manager/Senior Scientist
Southern Research Institute
Birmingham, Alabama**

For more than 50 years, the people of Southern Research Institute have improved technologies and developed products to enhance quality of life through scientific research. Our scientists and engineers specialize in drug development, drug discovery, engineering, energy and the environment. Every day we identify needs and provide solutions in these areas using creative concepts, innovative products and breakthrough processes. The Drug Development Division conducts comprehensive preclinical drug development and testing as well as basic research in drug design and synthesis, pharmaceutical formulations, toxicology, virology, microbiology, and pharmacology.

Southern Research Institute is currently seeking candidates for the position of **Project Manager/Senior Scientist, Toxicology**. This position requires a PhD in Toxicology or related field or a DVM with advanced training (PhD or Board Certification) in Toxicology or a related field, minimum of 10 years of Toxicology or related experience, at least 5 of which occurred within the pharmaceutical industry or in a contract laboratory environment participating in preclinical drug development; a documented record of accomplishment of successfully leading a multidisciplinary group of toxicologists, pharmacologists, pathologists and related scientists; and hands on experience of planning, designing, undertaking and analyzing animal toxicology studies for IND and NDA submissions. Experience as a principal investigator or project manager on commercial projects or government contracts, knowledge of regulatory requirements for the United States (as well as Europe and Japan), and a record of increasing career responsibilities and documented publications in peer-review journals is highly desirable. Academic experience and/or experience managing government contracts is a plus.

The successful candidate will assist the Department Director in the management of the Department of Safety Assessment; assume direct responsibility for specific functions as assigned; and act as the Deputy for the Director in his absence. Along with the Department Director, the successful candidate will share the responsibility for financial success of the department, scientific quality, timeliness, and quality client service. Responsibilities will include assisting clients in the design of studies and registration strategies; serving as a project manager for clients with multiple study programs and serving as a principal scientist in toxicology or one of the other disciplines involved in preclinical safety testing; and directing project teams of toxicologists, pathologists, pharmacokineticists, analytical chemists, research associates and administrative personnel across a range of projects. Assisting the Director, the successful candidate will develop and implement systems and procedures and provide operational direction for the department to continue as a leader in the industry providing contract preclinical safety testing.

Application letters, accompanied by a curriculum vitae, names and addresses of three references, and a summary of current management and research activities should be sent to:

**Sheryl Brown
Human Resources
Southern Research Institute
P.O. Box 55305
Birmingham, AL 35255-5305**

**Must refer to Dept #794, Fax: 205-581-2880
E-mail: s.r.brown@sri.org. AA/EOE**

A Place With Vision.

As a leader in the ophthalmic and otic industry, Alcon understands the importance of vision. And it shows in our reputation for providing a rewarding and enriching environment for all the people who make us what we are. It's just part of the reason why we were selected "one of the 100 best companies to work for" by Fortune magazine. Become part of our vision.

Manager, In Vivo Pharmacology Glaucoma (Intraocular Pressure) Screening

The successful candidate will perform the following:

- Daily management of glaucoma (intraocular pressure) sub-group within In Vivo Pharmacology Screening
- Hands-on expertise in established IOP and mechanism models
- Development of new in vivo models to support qualification of new project candidates
- Technical oversight of program output to assure quality data in support of new project candidates
- Reporting sub-group status and output at appropriate internal meetings
- Evaluate performance of technical personnel

Qualifications:

- Ph.D. in Pharmacology preferred with postdoctoral research experience in ocular pharmacology
- Expertise in intraocular pressure theory and models
- Five to 10 years of experience, supervisory experience a plus

**Please forward your resume and salary requirements to:
job90_400342@job3.cbdr.com**

Senior Scientist-Ocular External Disease Research

The successful candidate will be responsible for the following:


- Initiation, planning and execution of research strategies to identify and characterize drugs for the treatment of external ocular disorders (allergy and inflammation), with particular emphasis on dry eye.
- Leadership toward the achievement of drug discovery group objectives
- In vitro, in vivo and ex vivo experimentation, compound screening and method development
- Documentation, interpretation, presentation and publication of data

Qualifications:

- Ph.D. in pharmacology or related field with a minimum of three years post-doctoral research experience in external ocular diseases within an academic or industrial setting
- Demonstrated initiative and leadership as an established "hands-on" independent researcher
- Highly refined collaborative, interpersonal communication, presentation and written communication skills

**Please email your salary requirements and resume to:
job24972_400342@job3.cbdr.com**

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www.alconlabs.com

University of Pennsylvania

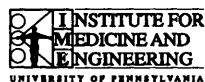
Institute for Medicine and Engineering Postdoctoral Research in Interdisciplinary Cardiovascular Research

Postdoctoral opportunities are available for interdisciplinary research at the molecular, cellular and tissue levels funded in part by a NIH Bioengineering Training Grant in Cardiovascular Pathophysiology. The program is administered through the Institute for Medicine and Engineering, located in state-of-the-art research laboratories adjacent to both the School of Medicine and the School of Engineering, and interacting extensively with all clinical and basic departments of both schools. Hypothesis-driven and design-driven approaches to cardiovascular research are emphasized. Postdoctoral M.D. and/or Ph.D. trainees will be selected on the basis of academic record, research abilities, and commitment to research in interdisciplinary cardiovascular biology/pathology.

Opportunities are available in a wide spectrum of cardiovascular research in the laboratories of Peter F. Davies, Ph.D. (Director) - endothelial mechanotransduction; transcriptional profiling; H. Scott Baldwin, M.D. - vascular development; Scott L. Diamond, Ph.D. - vascular nonviral gene expression; reaction dynamics in blood; Dennis E. Discher, Ph.D. - single-molecule mechanics; novel polymer vesicles; micromanipulation of cells. Keith J. Gooch, Ph.D. - vascular tissue engineering and gene therapy; Daniel A. Hammer, Ph.D. - leukocyte-endothelial adhesion and signaling; Paul A. Janmey, Ph.D. - cytoskeletal rheology, inositol lipid signaling and biophysics; Irena Levitan, Ph.D. - ion channel electrophysiology; Robert J. Levy, M.D. - site-specific therapy; heart valves; tissue engineering; Susan S. Margulies, Ph.D. - mechanical injury of the lung, epithelial mechanotransduction; Warren S. Pear, M.D., Ph.D., stem cells in vascular development and hematopoiesis; Valerie M. Weaver, Ph.D. - extracellular matrix-integrin regulation of cell phenotype. Additional information (with links) can be found at: <http://www.med.upenn.edu/ime>.

US citizens and permanent residents are eligible for Training Grant support. However, non-training grant support for qualified candidates is available.

Send CV, a statement of research interests, name of faculty of interest, and names of three references to:



M. Jackson, Cardiovascular Postdoctoral Program
Institute for Medicine & Engineering, University of Pennsylvania
1010 Vagelos Research Laboratories
3340 Smith Walk, Philadelphia, PA 19104-6383.
email: marvinj@pobox.upenn.edu

Affirmative Action / Equal Opportunity Employer



Pintex Pharmaceuticals is an early-stage, privately held biotech company focused on the discovery of new cancer diagnostic and therapeutic targets.

Bench Scientists

We are looking for two highly motivated individuals with a solid background in molecular, cellular and cancer biology. Candidates should have strong technical experience in protein biochemistry, cancer biology, enzymology and antibody-based assays. Research involves work on human materials.

Primary responsibilities include performing protein and antibody purification, analyzing proteins in human samples using immunoblotting and immunocytochemistry and developing in vitro antibody-based assays.

Pintex offers attractive benefits including a stock option plan.

Please mail your CV along with three references to:

Pintex Pharmaceuticals, Inc.
86 Rosedale Road, PO Box 189
Watertown, MA 02472
or e-mail:
humanresources@pintexpharm.com

No phone calls please.

Equal Opportunity Employer

DEPARTMENT OF ORGANISMAL BIOLOGY AND ANATOMY

The Department of Organismal Biology and Anatomy is multidisciplinary and has strengths in the fields of evolutionary developmental biology, biomechanics, molecular adaptation, neurobiology, and vertebrate paleontology. The Department is undergoing a major expansion and will fill multiple tenure-track openings in most of these areas over the next four years. While we encourage applications from exceptional candidates in any of the above fields at the current time, we aim to focus this year's hiring primarily in the fields of biomechanics and neurobiology.

Successful candidates will be expected to teach courses at undergraduate, graduate or medical school levels. The level is open; junior and senior scientists are both encouraged to apply. The review of applications will begin on 11/01/00 and continue until all positions are filled. Applicants should send a curriculum vitae, statement of research and teaching interests, up to four reprints, and names and addresses of three referees to: Faculty Search Committee, Department of Organismal Biology and Anatomy, University of Chicago, 1027 E. 57th Street, Chicago, IL 60637, Fax: 773-702-0037.



**THE UNIVERSITY
OF CHICAGO**

An Affirmative Action/ Equal Opportunity Employer

RNA BIOLOGISTS

The Department of Biological Sciences at Wayne State University invites applications from individuals seeking to join a vibrant group of scientists studying fundamental mechanisms of gene expression and regulation involving RNA. We seek to fill two tenure-track positions at the Assistant/Associate Professor level, and are looking for individuals with suitable post-doctoral experience in the study of RNA who would complement and extend our research strengths in protein synthesis, RNA processing, post-transcriptional regulation, and RNA structure and function. Successful candidates will be expected to establish vigorous, externally funded research programs, and participate in teaching at the graduate and undergraduate levels. Generous start-up packages and salaries will be provided. Excellent research space and facilities are available in the Biological Sciences Building, which was completed in 1991 and houses the WSU Biotechnology research core and Genomics hub of the Michigan Life Sciences Research Corridor. State-of-the-art support facilities are available, including confocal and electron microscopes, phosphorimager, high-throughput DNA sequencers, and DNA microarray instrumentation. A bioinformatics suite, greenhouses, and small-mammal and insect facilities are also available. Wayne State University is a Carnegie I research university. Interdisciplinary interactions with nucleic acid structural biologists, biochemists, the Institute for Scientific Computing and with medical school faculty and research programs afford outstanding opportunities for multi-faceted approaches to biological problems. Applicants should submit a curriculum vitae, a summary of research plans, and have three letters of recommendation sent to:

Chair, Faculty Search Committee,
Department of Biological Sciences,
Wayne State University,
5047 Gullen Mall
Detroit, MI 48202

**WAYNE STATE
UNIVERSITY**

<http://bio.wayne.edu/ribo>

Equal Opportunity Employer



Faculty Position in MOLECULAR NEUROBIOLOGY

The Neurobiotechnology Center and the Department of Neuroscience at The Ohio State University invite applications for a tenure track faculty position at the Assistant or Associate Professor level. Candidates must have a record of research productivity and excellence in Molecular Neurobiology. The successful candidate will be expected to establish an independent research program with extramural support, and to participate in academic programs. Applicants using cutting-edge molecular approaches to address significant problems in any area of neurobiology are encouraged to apply.

An attractive start-up package is available. The new faculty member will occupy a newly renovated laboratory and share state-of-the-art core facilities at the Neurobiotechnology Center with 11 current members working in various areas of molecular neurobiology. Review of applications will begin November 1, 2000. Applicants should submit a curriculum vitae, statement of research plans, and three letters of reference to: Dr. Tsonwin Hai, Chair, Molecular Neurobiology Search Committee, Neurobiotechnology Center, 206 Rightmire Hall, 1060 Carmack Road, Columbus, OH 43210.

For more information about the Neurobiotechnology Center and Department of Neuroscience, please visit www.neurobiotech.ohio-state.edu and www.med.ohio-state.edu/neuroscience/neurodept.html.

The Ohio State University is an Equal Opportunity/Affirmative Action Employer.



MAYO CLINIC VIRAL IMMUNOLOGY POSTDOCTORAL FELLOWSHIP POSITION

A postdoctoral position is available starting January 2001 in the Viral Immunology Laboratory of Dr. Carlos V. Paya at Mayo Clinic Rochester to study the interplay between the transcription factor NF-kB and HIV and their replication. Candidates require expertise in cell biology, immunology, and/or virology. Send a curriculum vitae, description of research experience and the name and address of three references to the attention of:

Teresa Hoff
Mayo Clinic
Guggenheim 501
200 First Street SW
Rochester, MN, 55905
E-mail: thoff@mayo.edu

Mayo Foundation is an affirmative action and equal opportunity employer and educator.

Neurotrophic Bioscience Inc. (NTB) is a functional neurobiology company, with a focus on neurodegeneration. NTB is developing neuroprotective products derived by applying its functional assay technologies to proprietary and licensed sources of factors.

NTB's rapid growth and recent 2nd round financing, have created new career opportunities. Successful NTB employees are exceptionally organized, have an entrepreneurial spirit, a passion for their work, and thrive in a challenging, team-oriented environment. We are currently seeking qualified individuals for the following positions:

MOLECULAR BIOLOGY

Scientist

The successful candidate must have a strong background in genomics, with direct experience in the application of the principles of subtractive hybridization to the successful identification and subsequent cloning of genes. You will be responsible for isolating a family of genes from a library of well-characterized cells. In addition to an in-depth understanding of standard molecular biology methods in current use in the biotechnology industry, experience with microarray technology will be an advantage. We are looking for a hardworking, self-motivated individual with strong communication skills, who can work independently and also as part of a team. A minimum of 3 years experience in the biotechnology industry is preferred. The position requires a Ph.D. relevant postdoctoral training, and a current focus on an integrated molecular biology/neurobiology approach to solving specific problems in the CNS.

Senior Technician

A position is available to work as part of a molecular biology team. Direct experience in constructing cDNA libraries is essential. Extensive experience with RT-PCR and RACE methods is required. Experience in culturing primary cells will be an advantage. We are looking for a hardworking, self-motivated individual with strong communication skills, who can work independently and also as part of a team. A minimum of 3 years experience in the biotechnology industry is highly desirable. The position requires an M.Sc. degree in molecular biology, and a working knowledge of neurobiology.

CELL BIOLOGY

Scientist

We seek a scientist to execute a significant project, that requires knowledge of cell biology, molecular biology and protein chemistry. An ability to manage the Cell Biology Laboratory effectively will be a significant component of this job. The job is best suited to a scientist with the capacity to use relevant methods from different disciplines to solve significant scientific problems. The job entails the extensive use of cell culture methods. You will participate in the scale up of the present bioassay protocols to the HTS level. A minimum of 3 years experience in the biotechnology industry would be an advantage. A good team player, with exceptional communication skills, you will be methodical and innovative, and possess a passion for discovery. The position requires a Ph.D. in cell biology or neurobiology, and relevant postdoctoral training.

Research Associate

This position requires a person with extensive experience in all aspects of cell culture, particularly the culture of primary neurons. You must be familiar with the principles of immunology & immunocytochemistry, and must have contributed to the development of methods in this field. You will be responsible for training others in the correct use of a cryostat and a vibratome, and in performing in situ hybridization protocols. The applicant must be prepared to learn detailed, fine microdissection techniques, as applied to the fetal rat and mouse brains. The position requires an M.Sc. degree, and at least 5 years of laboratory experience.

Compensation, relocation and equity option packages have been designed to attract and retain the best candidates.

Please send cover letter, resume / CV to:

Donna Coulson
Neurotrophic Bioscience Inc.
96 Skyway Avenue, Etobicoke, Ontario CANADA M9W 4Y9
Email: donnac@ntbbio.com
Fax: (416) 674-8060

Where
on Earth
will Science
take You?



**Research
Biologist**
Skin Bioscience

UNILEVER has the distinction of ranking with the top consumer products companies in the world in sales and innovation. Our success is built upon collaborative scientific research and product development efforts resulting in over 1000 nationally and internationally known brands including Dove, Lever 2000, Wisk, "all", Vaseline, Pond's, Suave, Elizabeth Arden, Calvin Klein Cosmetics, Lipton, Ragu, Country Crock, and Breyer's Ice Cream. This position is based at our global research facility in Edgewater, NJ, located on the Hudson River within 20 minutes of Manhattan's diverse academic, entertainment and cultural resources.

Research Biologist Skin Bioscience

You will be responsible for utilizing genomics, and in particular gene arrays and for handling and interpreting the large amount of data generated from such techniques. Ideally this scientist should also have some experience in genetic linkage analysis as well as an ability to work independently, considerable computer and statistics skills and an ability to evaluate the literature, establish new methods and to work collaboratively and develop relationships with leaders in this field who are outside of Unilever.

Responsibilities will also include utilizing array based assays to test hypotheses consistent with project objectives. It is also imperative that the individual can interpret the large quantity of data from array analysis, relate this data to skin physiology, biochemistry and cell biology and propose new routes to benefit based on the knowledge arising from arrays. The latter responsibility will require an ability to seek out best bioinformatic practices outside of Unilever, to implement these practices internally so computer skill and data management is essential. In

addition, you will be expected to report results, challenges to project team and write up results as STRs along with correlating the gene array finds to those findings of other team members.

Qualifications include a PhD in genetics/molecular biology or a related bioscience subject, experience in DNA manipulation and the use/interpretation of gene arrays, experience in genetic linkage analysis, excellent computer and data management skills along with good written and communication skills and some supervisory skills. Experience in the biology of skin and skin cells would be a distinct advantage.

We offer a competitive salary, flexible benefits, and a dynamic environment filled with learning and discovery beyond conventional scientific boundaries. For consideration please forward your resume to: Human Resources Dept. GEN, Unilever Research US, 45 River Road, Edgewater, NJ 07020 or E-Mail: job.mca@unilever.com Please place only the letters GEN as the subject of the e-mail. We appreciate your interest in our company and will contact applicants who most closely meet our immediate requirements. Applicants must be authorized to work in the USA. Unilever is an Equal Opportunity Employer m/v/d/v.



Unilever Research

For more information about Unilever Research and Unilever visit our Internet Web Site at <http://www.unilever.com>

Chair of the Section of Oral Biology

The Ohio State University College of Dentistry is seeking applications for a full-time, tenure-track faculty member to serve as Chair of the Section of Oral Biology. The appointment will be at the rank of Professor. The Section's main responsibilities include predoctoral and postdoctoral education and research. Its eleven members have attracted significant extramural funding in several areas of research, including the neurobiology of taste, neuroendocrine immunology, wound healing, molecular microbiology, and muscle physiology. Applicants should hold a Ph.D or equivalent and have an active research program. Candidates must be experienced in academic administration, teaching and service. They must also have a record of sustained extramural funding and a genuine interest in promoting interdisciplinary research and teaching.

It is the policy of The Ohio State University to limit access to communications and letters of reference to those directly involved in the selection process. However, the status of this policy is unclear under the Ohio Open Records Act. Those seeking confidentiality should indicate this fact in all communications. The University will make every reasonable effort to honor these requests within the limits of Ohio law.

Salary will be commensurate with the candidate's qualifications and experience. *The Ohio State University is an Equal Opportunity/Affirmative Action employer.* Qualified women, minorities, Vietnam-era veterans and individuals with disabilities are encouraged to apply.

Review of applications will begin October 1 and continue until a Chair is named. Inquiries, nominations, and curriculum vitae should be directed to:

Dr. John D. Walters, (walters.2@osu.edu)
305 West 12th Avenue
P.O. Box 182357
Columbus, OH 43210

OUTREACH

GS-486-14/15

**Program Leader for Wildlife Research
USDA, Forest Service, Research and Development
Washington, D.C.
Wildlife, Fisheries, Watershed, and Air Research Staff**

USDA Forest Service will soon be recruiting for a GS-14/15 Program Leader for wildlife research. The Program Leader will be responsible for coordinating the agency's national wildlife research efforts. Specific responsibilities include working with customers and partners to identify national program priorities; developing program initiatives; developing budgets and internal and external support for budgets; providing technical support to the Research and Development (R&D) Deputy Chief; and providing oversight of approximately 20 regional research work units. As national program leader for wildlife research, the incumbent represents the agency at national and international conferences, workshops, and working groups. The incumbent is responsible for coordinating Forest Service research efforts with the programs of other federal agencies, especially USDI agencies such as the Fish and Wildlife Service, the Geological Survey, and the Bureau of Land Management. The program leader is expected to develop and maintain cooperative relations with non-governmental wildlife conservation constituencies and to keep partners and customers apprised of wildlife research outputs and benefits.

Strong candidates for the position will have demonstrated expertise in conducting wildlife research as evidenced by a strong publication record in peer reviewed scientific journals. In addition, strong candidates will have experience in research leadership and in managing a research program and research team. Demonstrated expertise in developing cooperative programs with other agencies or institutions is also highly desirable.

The position is located in the national headquarters of the Forest Service, Washington, D.C. The salary range is \$71,954 to \$110,028. For further information about the duties and responsibilities of the position, please contact Dr. Richard V. Smythe, Staff Director, WFWAR, at 202-205-1524 or via e-mail at rsmythe@fs.fed.us. To request a vacancy announcement when it is available, please contact Ms. Marty Longan at 202-205-1345 or via e-mail at mlongan@fs.fed.us. It is anticipated that the vacancy announcement will be posted on OPM's USA Jobs website (www.usajobs.opm.gov) early in 2001.

MitoKor

Scientist

MitoKor, a unique biotechnology company based on mitochondria, the biochemical power plants of cells, is actively seeking a dynamic, self-starter to join our team. You will initiate and carry out membrane biochemistry/biophysics efforts including: studies of function of membrane channels and transporters in reconstituted systems, tests of membrane-active compounds, and identification of novel channels in biological membranes.

The ideal candidate for this position has a PhD in biological/biochemical sciences with at least 2 years postdoctoral experience. Bilayer lipid membranes (BLM), proteoliposomes, ion channels, math models of membrane transport and lipid biophysics experience required. Enthusiastic and creative scientist who enjoys working in a team environment is preferred. Knowledge of mitochondrial bioenergetics and physiology and patch-clamp skills a plus.

In addition to an excellent compensation and benefits package, including stock options and 401k, we offer a challenging work environment and the opportunity to be involved in making MitoKor a success. For immediate consideration, please e-mail, send or fax your resume (Job Code 2000-020) to:

11494 Sorrento Valley Road
San Diego, CA 92121
Fax (858) 672-3429
e-mail: hr@mitokor.com

EOE/M/F/D/V

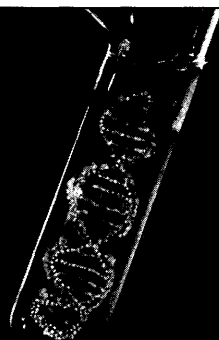
CDC/National Institute for Occupational Safety and Health Associate Director for Science

The National Institute for Occupational Safety and Health (NIOSH), Health Effects Laboratory Division, located in Morgantown, West Virginia, has an immediate opening for an Associate Director for Science. The Health Effects Laboratory Division conducts focused research of occupational disease and identifies causative substances and early indicators of response to chemical, biological, and physical substances which will be directed at prevention and control of occupational disease. The successful candidate will perform research within the mission of HELD and provide technical advice, oversight and/or coordination of HELD research for the HELD Office of the Director.

The ideal candidate for this permanent, full-time position would be a U.S. citizen with an extensive background in toxicological science acquired through formal training (Ph.D. degree or equivalent) and extensive research experience.

Individuals interested in seeking a challenging opportunity should contact: Renee Dotson at (304) 285-6125 or at rdotson@cdc.gov.

*NIOSH is an Equal Opportunity Employer.
NIOSH is a smoke-free workplace.*



INITIATIVE SPARKS INITIATIVE.

SCIENTIST PRECLINICAL DEVELOPMENT

We seek a collaborative professional to be involved in registration-enabling preclinical studies, supporting lead candidate development programs for biologic and small molecules. Responsibilities include: design and oversight of preclinical pharmacology, pharmacokinetic and toxicology studies; data analysis and reporting of study results; and preparation of regulatory documents for regulatory agencies. The ideal candidate will possess 5+ years of relevant pharmaceutical or CRO experience and a PhD or PhD/DVM in a basic medical science with concentrations in toxicology and experience in immunology and animal models. Experience conducting various aspects of preclinical drug molecule evaluations is essential. Basic knowledge of drug development principles, broad training in biologic/medical sciences, and a working knowledge of computer software, statistics, and standard bioanalytical methods are desired. Excellent written and verbal communication skills a must.

Foster your Initiative and creativity at Biogen. We have one of the strongest financial profiles in the industry and our compensation and benefits package, including equity participation, is unmatched. For consideration, please forward your resume to: Biogen, Inc., Attn: Human Resources, Source Code: JT-A100-SCI, 14 Cambridge Center, Cambridge, MA 02142; Fax: (617) 679-2546; Email: resumes@biogen.com (Source Code ONLY must appear in the subject line). Biogen is an Equal Opportunity Employer. No phone calls, please.

Innovation works at Biogen. The
creativity and ambition of our
workplace sparks our teams to
take responsibility, move on
intelligent risks, and drive innovative
decisions that are changing
not only the science of
medicine, but the lives of people
with serious diseases. If you're
ignited by taking initiative, you'll
meet your match at Biogen.

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The pharmaceuticals market is rapidly changing; evolving and maturing everyday as new ways and tools are being developed to improve the quality of human life. Ideas, outstanding performance and the growth and caring of our people are at the core of our value system. Our future is in the hands of the individuals who make up our company.

Associate/Staff Scientist - Mass Spec

As a member of our Chemical and Physical Sciences Group, you will use your 1-3 years of experience in advanced LC-MS methodology to advance the drug discovery process within the Directed Parallel Synthesis group and all Medicinal Chemistry groups by utilizing parallel synthesis techniques. In addition to operating various LC-MS instrumentation, you'll work closely with chemists to develop methods and protocols, interpret data and assist with designing the support system. Our ideal candidate has a BS/MS in Chemistry or Analytical Chemistry. Experience with Electrospray Ionization, diverse chromatographic methods, MassLynx software and/or FractioLynx purification is highly desired.

Our commitment to our employees includes an excellent salary and a comprehensive benefits package. To apply, please forward your resume and cover letter to: **DuPont Pharmaceuticals Company, Human Resources, Attn: KB/VR, E400-2413, PO Box 80400, Wilmington, DE 19880-0400.** EOE.



DuPont Pharmaceuticals Company

Cardiac Ion Channel Electrophysiologist

Combining your experience in whole cell patch clamp recording and analysis of voltage-dependent currents in cultured mammalian cells expressing cloned cardiac ion channels with the ability to effectively work in a team environment, makes you the perfect candidate for this position. You'll need a BS/MS or Ph.D. in Physiology, Pharmacology or related discipline along with knowledge of pCLAMP software and presentation programs such as IGOR or SigmaPlot. Experience in cardiac action potential recording, fluorescence imaging and molecular biological techniques highly desired.

Our commitment to our employees includes an excellent salary and a comprehensive benefits package. To apply, please forward your resume and cover letter, **with code: SSS**, to: **DuPont Pharmaceuticals Company, Experimental Station, E400-2413C, Route 141 and Henry Clay Rd., Wilmington, DE 19880; e-mail: AMSResume@dupontpharma.com.** An EOE.



Research Biochemist Kemin Biotechnology

Kemin Biotechnology, L.C., has an immediate opening for a research biochemist. The successful candidate will be part of Kemin's research and development department and will conduct business related exploratory and applied research and product development. A Bachelor's or Master's degree in biochemistry or related subject is required. Experience in protein chemistry and protein purification is desirable. The candidate should have good project management skills and dedication to bench research. Experience with computer spreadsheets and word processing are a plus. Excellent organizational and communicational skills are a must.

Kemin Biotechnology, L.C., offers a tobacco free environment. All job offers are contingent upon passing a drug screen and physical examination.

To apply, please send resume to:

**Kemin Biotechnology, L.C.
Human Resources
2100 Maury Street
Des Moines, Ia 50317
Fax: 515-564-0630
E-mail: jobs@kemin.com**

An equal opportunity employer.

Canji, Inc., an exciting, San Diego-based division of Schering-Plough Research Institute, has several opportunities for enthusiastic and highly motivated biological researchers interested in discovering and developing novel gene therapies. As a member of multiple project teams, you will work in an interdisciplinary pharmacology department and support animal model development for the investigation of a novel wound healing therapeutic.

Senior Scientist - Ideal candidate will have expertise in designing and executing *in vivo* animal models and supporting cell biology for cutaneous diseases or growth factor signaling paradigms.

Knowledge of basic molecular biology techniques, immunohistochemistry, morphological analysis, *in situ* hybridization, and computer image analysis desirable. Should be familiar with computer data analysis, statistical analysis and have strong organization, communication and writing skills. Experience with wound healing paradigm, ischemic skin models, extracellular matrix, growth factors is preferable. Candidate should have Ph.D.,

DVM or MD with minimum 2-5 years of relevant experience in wound healing and/or cutaneous biology or dermatology.

Associate Scientist - The ideal candidate will be able to plan, execute and evaluate experiments for multiple project teams and will be experienced in working with rodent models of cutaneous diseases, such as wound healing. Background must include experience performing surgery, sample collection, preparation and analysis. Experience with *in vivo* analysis of growth factor signaling pathways, and *in vitro* biology techniques (e.g. cell culture, cell based assays, ELISA, Western blot, PCR) desirable. This position requires a BS or MS with 8-10 years of relevant experience.

In return for your expertise, we offer a highly competitive compensation package, excellent benefits, a stimulating environment and access to state-of-the-art technology. For consideration, please e-mail or send your resume, including cover letter to: Human Resources, Canji, Inc., 3535 John Hopkins Court, San Diego, CA 92121. E-mail address hrsandiego@spcorp.com We regret we are unable to respond to each resume. Only those selected for an interview will be contacted. EOE/M/F/D/V



SCIENTIST PROTEIN PURIFICATION DEVELOPMENT

R&D Systems, Inc., a leading manufacturer of biological products, seeks a proven professional in the Protein Purification Development group to develop cost-effective, robust and scalable processes for the refolding and purification of a large variety of recombinant proteins. Req. Ph.D. in Biochemistry or related field with a min. of 5+ years of relevant experience in the biotechnology or pharmaceutical industry, hands on experience in recombinant protein purification from bacterial, mammalian & insect cells, including laboratory and process scale chromatography, ultrafiltration, centrifugation, etc. Knowledge of cGMP, protein chemistry and protein characterization methods. Excellent communication, problem solving and people skills are required.

We offer a competitive salary & a comprehensive benefits package. Candidates wishing to be considered for this position please submit your curriculum vitae or resume to:

R&D Systems, Inc.

ATTN: SCI/90 Human Resources
614 McKinley Place NE
Minneapolis, MN 55413

hr@rndsystems.com
No Agencies Please

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POSTDOCTORAL RESEARCH POSITIONS
NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES
NATIONAL INSTITUTES OF HEALTH
P.O. BOX 12233, RESEARCH TRIANGLE PARK, NC 27709-2233

Biological Function and Action of Nuclear Receptors
Anton Jetten, Ph.D. (jetten@niehs.nih.gov)

Breast Cancer and Mammary Biology
Richard DiAugustine, Ph.D. (diaugus2@niehs.nih.gov)

Calcium Signaling
James Putney, Ph.D. (putney@niehs.nih.gov)

Cell Adhesion and Signal Transduction in Tumor Cell Metastasis
Kenneth Olden, Ph.D./John Roberts, Ph.D. (roberts1@niehs.nih.gov)

Comparative Carcinogenesis
Roger Wiseman, Ph.D. (wiseman@niehs.nih.gov)

Cytochrome P450 Arachidonic Acid Metabolism
Darryl Zeldin, Ph.D./Joyce Goldstein, Ph.D. (zeldin@niehs.nih.gov)

Eicosanoids and Pulmonary Immune Function
Darryl Zeldin, Ph.D. (zeldin@niehs.nih.gov)

Genetic Basis for Human Gene Expression Profiles Using Microarray Technology
Douglas Bell, Ph.D. (bell1@niehs.nih.gov)

Investigations of Free Radical Metabolism with Electron Spin Resonance and Immunology
Ronald Mason, Ph.D. (mason4@niehs.nih.gov)

Investigation of the Metabolic and Cellular Basis of Chemical Induced Toxicity and Carcinogenicity
Burhan Ghanayem, Ph.D. (ghanayem@niehs.nih.gov)

Ion Channel Physiology
Jerrel Yakel, Ph.D. (yakel@niehs.nih.gov)

Ion Channel Regulation by Signal Transduction Pathways
David Armstrong, Ph.D. (armstro3@niehs.nih.gov)

Mass Spectrometry and Protein Structure and Characterization
Kenneth Tomer, Ph.D. (tomerk@niehs.nih.gov)

Mechanisms by Which Cells Produce Mutations
Roel Schaaper, Ph.D. (schaaper@niehs.nih.gov)

Mechanisms of Cell Adhesion and Migration
Steven Akiyama, Ph.D. (akiyama@niehs.nih.gov)

Mechanisms of Renal Xenobiotic Transport
John Pritchard, Ph.D. (pritchard@niehs.nih.gov)

Mitochondrial DNA Replication
William Copeland, Ph.D. (copelan1@niehs.nih.gov)

Molecular Epidemiological Studies of Gene-Environmental Interaction
Douglas Bell, Ph.D. (bell1@niehs.nih.gov)

Molecular Neurobiology
J.S. Hong, Ph.D. (hong3@niehs.nih.gov)

Molecular Pathology
Robert Sills, D.V.M., Ph.D. (sills@niehs.nih.gov)

Molecular Toxicology and Carcinogenesis
Theodora Devereux (devereux@niehs.nih.gov)

Regulation of Signal Transduction Pathways by Adaptor Proteins
John O'Bryan, Ph.D. (obryan@niehs.nih.gov)

Signal Transduction by Inositol Phosphates
Stephen Shears, Ph.D. (shears@niehs.nih.gov)

Stress Induced Signaling Pathways: Preconditioning/Apoptosis
Elizabeth Murphy, Ph.D. (murphy1@niehs.nih.gov)

Toxicokinetic Modeling
Ronald Melnick, Ph.D. (melnickr@niehs.nih.gov)

Must possess Ph.D., M.D. or equivalent with no more than five years of postdoctoral experience. For further details, access <http://www.niehs.nih.gov/vacancy/postdoc.htm>. To apply, submit a cover letter, curriculum vitae and the names of three references to the hiring scientist at the above address.

NIH/NIEHS Is An Equal Opportunity Employer

Director University Relations Program

University of California
 **Lawrence Livermore
National Laboratory**
Science in the National Interest

An exciting opportunity exists for a dynamic Director for the University Relations Program, one of the key avenues through which LLNL promotes scientific exchange with university communities and sustains the intellectual vitality of the Laboratory. Current plans include strengthening existing collaborations and actively developing new exchanges and partnerships to develop growth opportunities in basic and applied research in areas of strategic importance to LLNL programs. The Director will lead and manage university collaborations and other LLNL Programs; will manage a portfolio of ~\$15M, and ~30 staff employees who are organized into five Scientific Institutes and the Education Program. Additionally, the Director may pursue active research at a modest level, with negotiable funding.

Qualifications include:

Nationally-recognized research accomplishments as evidenced by publications and funding; experience in institution-level scientific research and administration, program development and management; Demonstrated senior-level leadership and management skills; Knowledge of R&D activities in the federal and state governments, universities and the private sector; Demonstrated communications skills commensurate with a senior-level management position.

LLNL is one of the nation's premier scientific research and development laboratories. We offer a stimulating environment and a competitive salary/benefits package. Located in the scenic Livermore Valley, we are central to the surrounding Bay Area communities. To be considered, reference Dept. **AJSC980AD**. E-mail resume to urpdirector@llnl.gov, or mail resume to Ms. Molly Dougan, L-725, Recruiting and Employment, Lawrence Livermore National Laboratory, PO Box 5510, Livermore, CA 94551-5510. US Citizenship is required. We are proud to be an equal opportunity employer with a commitment to workforce diversity.

For more information about the University Relations Program and the job posting, visit our web sites at:

<http://www.llnl.gov/urp/>

<http://www.llnl.gov/jobs>

POSITIONS OPEN

JUNIOR AND SENIOR FACULTY OPENINGS CHEMICAL ENGINEERING UNIVERSITY OF PITTSBURGH

Department: The department is in an expansion mode and has been characterized as a "rising star." Currently we have nationally recognized programs in catalysis, polymer science, bioengineering, and multi-scale modeling. Excellent opportunities for active collaboration with the University of Pittsburgh Medical Center (ranked 11th in the nation) through the Pittsburgh Tissue Engineering Initiative and the McGowan Center for Artificial Organ Design.

The positions: We have interest in faculty who can effectively interface between departmental expertise and leverage the current capabilities with the incoming faculty's expertise. Areas of interest include tissue engineering, materials, catalysis, and strong candidates in other areas.

The Pittsburgh community: Pittsburgh is consistently ranked as one of the most livable cities with attributes such as high quality of life and low cost of living. Pittsburgh has also been characterized as one of the "hottest high-tech areas in America" by the *Wall Street Journal*. Pittsburgh ranks seventh nationally in the number of Fortune 500 headquarters, and the department receives substantial support from the local industrial community.

To apply: Please submit your résumé to: **Search Committee, Chemical Engineering Department, 1249 Benedum Hall, University of Pittsburgh, Pittsburgh, PA 15261.** The University of Pittsburgh is an Affirmative Action/Equal Opportunity Institution.

BIOLOGICAL OCEANOGRAPHER UNIVERSITY OF HAWAII

The Department of Oceanography within the University of Hawaii School of Ocean and Earth Science and Technology is inviting applications for a tenure-track faculty position in biological oceanography. Applicants must have Ph.D. degree in oceanography or related fields; excellent communication skills; and demonstrated capability for creative, high-quality research. We particularly seek strong applicants with research specialty areas in marine molecular biology, coral reef ecology, or nekton/pelagic ecology. The successful candidate will be expected to develop outstanding research and teaching/educational programs. The position will be filled at the **ASSISTANT, ASSOCIATE, or FULL PROFESSOR** level commensurate with qualifications and experience. Send curriculum vitae, statement of research and teaching interests, three representative publications, and the names and addresses of three references to: **Dr. Robert R. Bidigare, Search Committee Chair, Department of Oceanography, University of Hawaii, 1000 Pope Road, Honolulu, HI 96822.** The deadline for applications is 31 October 2000. Anticipated starting date is August 2001 subject to position clearance. Full job ad posted at **website: www.soest.hawaii.edu.** The University of Hawaii is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR OF RESEARCH

National medical society located in Baltimore, Maryland, is seeking a Director of Research to initiate and implement a new program to increase funding for urologic research. The successful candidate will serve as liaison with federal, nonfederal, and special interest groups in urology research funding and will work in conjunction with the research council to disseminate new information and initiatives. We are interested in a Ph.D. in a medically related science with personal research experience with federal funding and who is familiar with the NIH grants application process. The candidate must have highly effective personnel management and interactive skills with diverse individuals as well as a proven ability to express ideas both orally and in writing. Send résumé to: **Debbie Scoblick, PHR, Director of Administration, American Urological Association, 1120 North Charles Street, Baltimore, MD 21201. FAX: 410-468-1836; e-mail: Scoblick@auanet.org.**

POSITIONS OPEN

SEARCH CONTINUES ASSISTANT/ASSOCIATE VEGETABLE SPECIALIST

This continuing-track position (75% extension and 25% research) is available at the **ASSISTANT or ASSOCIATE SPECIALIST** level on January 1, 2001. The successful candidate will be a member of the Department of Plant Sciences and located at the Yuma Agricultural Center. The individual is expected to develop an extension education and applied research program that addresses the needs of the vegetable crops industry in Arizona. The individual is also expected to take a leadership role in providing technical expertise, training, and educational materials for extension agents and clientele in the vegetable industry. Opportunities exist for collaborations in research and extension education with faculty in the Department and in related departments in the College of Agriculture, both in Yuma and on the main campus in Tucson. The successful candidate will also be encouraged to participate in undergraduate teaching and in graduate student training. This position requires a Ph.D. degree in horticulture, crop sciences, or a closely related field with an emphasis in the physiology of vegetable crops. The successful candidate will also have demonstrated excellence in applied research and extension, the communication skills necessary to be effective in teaching, and an ability to attract grant funding. The salary will depend upon qualifications and experience. Review of applications is ongoing and continues until the position is filled. Send letter of application, résumé with statement of research/extension interests and copies of transcripts, and have three letters of reference sent to: **Chair, Vegetable Specialist Search, Department of Plant Sciences, The University of Arizona, Yuma Agricultural Center, R.R. 1, Box 40M, Somerton, AZ 85350-9701. Telephone: 520-726-0458; e-mail: gwright@ag.arizona.edu; website: http://ag.arizona.edu/PLS/.** The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer; Minorities/Women/Disabled/Veterans.

TENURE-TRACK FACULTY POSITION ASSISTANT/ASSOCIATE PROFESSOR MICROBIAL NATURAL PRODUCTS Center of Marine Biotechnology University of Maryland Biotechnology Institute

The Center of Marine Biotechnology (COMB) of the University of Maryland Biotechnology Institute seeks applications for a tenure-track Assistant/Associate Professor. The successful candidate will have an established track record on the molecular biology/ecology of microorganisms of importance for natural products discovery. Key organisms of interest include bacteria, cyanobacteria, and archaea that are associated with organisms producing natural products. Priority will be given to applicants studying the relationship between symbiotic bacteria and their invertebrate marine hosts. Applicants must have a Ph.D. and at least three years of relevant experience.

COMB is an integrated research community committed to the study, protection, and enhancement of marine resources through the application of molecular biology and molecular genetics. COMB offers excellent research and core facilities. Qualified applicants should submit a letter of intent that includes research goals together with detailed curriculum vitae and the names and addresses of three professional references. Position available: January 1, 2001. Applications: Applications should be sent to:

**Chair, Natural Products Search Committee
Center of Marine Biotechnology
701 East Pratt Street
Baltimore, MD 21202**

Closing date: Application review will begin on October 15, 2000, and will continue until a suitable candidate is selected.

The University of Maryland Biotechnology Institute is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and candidates with disabilities are encouraged to apply.

POSITIONS OPEN

MOLECULAR NEUROSCIENCE DEPARTMENT OF BIOLOGICAL SCIENCES SMITH COLLEGE

The Neuroscience Program and the Department of Biological Sciences at Smith College invite applications for a new full-time tenure-track **ASSISTANT PROFESSOR** position in molecular neuroscience starting September 1, 2001. The successful candidate appointed to the Department of Biological Sciences will be a significant addition to our interdisciplinary program in neuroscience. We will consider a wide range of specialties within molecular neuroscience, including (but not limited to) membrane channels, membrane or intracellular receptors, neurogenetics, neural development, neuroendocrinology, and cell biology of neurons. The new faculty member would offer an advanced lecture and laboratory course in molecular neuroscience and an introductory neuroscience laboratory course at the molecular level. He or she would also have the opportunity to participate in team-taught course offerings in neuroscience and would be expected to develop a strong research program with substantial opportunities for undergraduate participation. Candidates should have a Ph.D. and a commitment to undergraduate education. Preference will be given to persons with teaching and postdoctoral experience. Located in western Massachusetts, Smith College is a leader in the education of women and has a large and active program in neuroscience. The Five College Consortium, composed of Smith, Amherst, Mount Holyoke and Hampshire Colleges and the University of Massachusetts, provides a rich intellectual and cultural life for faculty and students, as well as collegial opportunities in teaching and research. Curriculum vitae, statements of teaching philosophy and research interests, and three letters of recommendation should be sent to: **Margaret Anderson, Chair, Neuroscience Search, Department of Biological Sciences, Clark Science Center, Smith College, Northampton, MA 01063.** Complete applications should be received by November 1, 2000. Smith College is an Equal Opportunity Employer encouraging excellence through diversity.

MOLECULAR MICROBIOLOGY FACULTY POSITIONS DEPARTMENT OF MICROBIOLOGY The Ohio State University

Applications are invited for two tenure-track faculty positions at the **ASSISTANT PROFESSOR** level in the Department of Microbiology at The Ohio State University. Applicants must have a Ph.D. in microbiology or a related discipline and postdoctoral research experience, documented evidence of high-quality research, and a strong commitment to teaching and research at a major research university. Successful applicants will be expected to develop and maintain a productive research program with extramural support and to participate in teaching at the undergraduate and graduate levels. Preference will be given to applicants with expertise and a planned program that emphasizes molecular approaches to microbial diversity, functional genomics, or environmental microbiology. Competitive salary, research space, and start-up packages are available for individuals to join a nationally recognized and growing Department within an excellent research environment. To expedite the review process, applicants should e-mail a copy of their curriculum vitae and a short description of their research interests and submit a letter of interest, description of future research plans, curriculum vitae, and the names of at least three potential references to: **Dr. Tina M. Henkin, Search Committee Chair, Department of Microbiology, The Ohio State University, 484 West 12th Avenue, Columbus, OH 43210. E-mail: microsearch@osu.edu.** For a more detailed description of the Department, please visit the **website: http://www.biosci.ohio-state.edu/~microbio/.** To guarantee full consideration, applications must be received by October 15, 2000. OSU is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and individuals with disabilities are encouraged to apply.



PROGRAM DIRECTOR
Division of Cancer Biology
Cancer Cell Biology Branch
National Cancer Institute
National Institutes of Health



The Cancer Cell Biology Branch (CCBB) of the Division of Cancer Biology (DCB), National Cancer Institute (NCI), is seeking an interdisciplinary scientist at the GS-13 or GS-14 grade level. The scientist will oversee an active grant portfolio and manage a scientific program in the molecular biology of cancer.

The CCBB develops and supports an extramural program of basic research in cancer biology, helps to coordinate and facilitate research efforts of the scientific community, remains a resource of information for both scientific and administrative matters of the NCI, and promotes scientific priorities of the Institute. Candidates should have significant research experience in an area of cancer biology, e.g., in the regulation of cancer gene expression, analysis of specific signal transduction pathways, generation and characterization of animal models for cancer investigation, or in mechanisms of cell growth control, and should be familiar with applications of new molecular technology. Such research experience may focus on a specific tumor type or include more generic in vitro systems. Applicants should also provide evidence of experience in the administration of science. The successful candidate will serve as Program Director for molecular biology and will have overall responsibility for program management and development in this expanding scientific area. This position is located in Rockville, Maryland.

A doctoral level degree in microbiology, biology, chemistry, basic medical science, biological sciences, chemistry, or an academic field of the health or pertinent sciences (i.e., biochemistry, molecular biology, physiology, etc.) allied to health or health-related research, is desirable. Candidates must be U.S. citizens.

The salary range is \$60,890 to \$93,537 (including locality pay). This position will be open August 10, 2000 through October 6, 2000, under announcement number NCI-00-2509A. To obtain information on how to apply and receive a copy of the complete vacancy announcement: via fax, call (301) 594-2953 and enter fax ID #1899 or; via Internet, <http://careerhere.nih.gov>, select current vacancies, and enter announcement number NCI-00-2509.

Selection for this position will be based solely on merit, with no discrimination for non-merit reasons such as race, color, religion, gender, national origin, politics, marital status, physical or mental disability, age, sexual orientation or membership/non-membership in an employee organization. NIH is an Equal Opportunity Employer.

**SENIOR SCIENTIFIC PROGRAM
AND POLICY ANALYST**

**National Institute of Diabetes and Digestive and Kidney Disease
(NIDDK) National Institutes of Health (NIH)**

The Institute is seeking Ph.D. and/or M.D. applicants for a key position within its Office of Scientific Program and Policy Analysis. This Office is responsible for guiding the Institute's strategic planning, legislative analysis, and program analysis functions and is located within the Office of the Director. Applicants with post-doctoral experience in planning, analyzing and describing research programs are particularly encouraged to apply, as are individuals seeking an opportunity for career transition from laboratory science to science-policy positions. Ideally, applicants will combine superior technical knowledge of the biomedical sciences—obtained through completion of a doctoral—level degree—with a demonstrated ability to develop a wide range of policy-significant documents for lay audiences. These documents typically convey the short- and long-term objectives of the Institute, current research accomplishments, compelling scientific opportunities and public health needs, strategies for capitalizing on emerging technologies and scientific discoveries, and the impact of biomedical research on understanding, diagnosing, treating and preventing disease. This position requires an ability to analyze operating programs, follow trends, synthesize data, and present the essence of research findings in integrated themes that unite the categorical disease programs of the Institute. Essential to this position is the ability to perceive and convey the importance of biomedical research to human health in global, understandable terms. Productive and collegial interaction is required with scientific program staff at all levels of the Institute and with members of the broad biomedical research community. Total salary is competitive and will be commensurate with the experience of the selectee.

Please submit current curriculum vitae to the attention of:

Ms. Joanna Voight
Office of Human Resource Management
NIDDK/NIH—Building 31, Room 9A30
31 Center Dr. MSC 2560
Bethesda, Maryland 20892-2560

Applications must be postmarked by
September 25, 2000, and received by
close of business September 29, 2000.



NIH IS AN EQUAL OPPORTUNITY EMPLOYER

NATIONAL INSTITUTES OF HEALTH
National Institute of Allergy and Infectious Diseases
Post-doctoral Fellow: Infectious Diseases Re-
search in Virology

Position will be available in the Molecular Viral Biology Section of the Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases. The research activities involve (1) elucidation of the molecular events that occur during replication and transcription of the genome of mosquito-borne flaviviruses; (2) detailed definition of the processing of the viral polyprotein into individual functional viral proteins; (3) the use of new "rescue" systems for these viruses to examine basic questions of viral genetics, molecular virology, viral pathogenesis, and the molecular basis of attenuation; (4) production of interesting and informative viral mutants that might prove useful in immunization of humans; and (5) evaluation of the immunologic determinants of resistance to infection and illness caused by these flaviviruses. This full-time research position offers a unique opportunity to work on investigations that range from basic molecular virology to applied vaccinology, and provides excellent laboratory-based experiences for post-doctoral scientists within seven years of receiving the Ph.D. and for M.D.s at all levels of training who plan a career in research in infectious diseases. The project will be supervised by Drs. Robert Chanock and Ching-Juh Lai. Starting salary ranges from \$29,000 to \$40,000 commensurate with experience/present salary. Applicants must be U.S. citizens or permanent residents. Please send curriculum vitae and three references to:

Dr. Robert M. Chanock
Chief, Laboratory of Infectious Diseases, NIAID
Bldg. 7, Room 100
6 Center Drive, MSC 0720
Bethesda, MD 20892
FAX: (301) 496-8312
E-mail: rchanock@niaid.nih.gov

NIH is an Equal Opportunity Employer

POSITIONS OPEN

PLANT PHYSIOLOGIST DEPARTMENT OF BIOLOGICAL SCIENCES SMITH COLLEGE

The Smith College Department of Biological Sciences invites applications for a full-time tenure-track **ASSISTANT PROFESSOR** starting September 1, 2001. We seek a Biologist with expertise in plant physiology to participate in an introductory course in biology/plant sciences and to offer a one-semester lecture and laboratory course in plant physiology at the intermediate level. Teaching of an advanced course in the applicant's area of specialty will be encouraged. Candidates should have a Ph.D., a commitment to undergraduate teaching, and a strong research program with projects suitable for undergraduates. Preference will be given to persons with significant postdoctoral experience. Located in western Massachusetts, Smith College is a leader in the education of women and has a large and active Biological Sciences Department and a nationally recognized Botanic Garden. A typical teaching load at Smith College is one course plus laboratory per semester. The Five College Consortium, composed of Smith, Amherst, Mount Holyoke and Hampshire Colleges and the University of Massachusetts, provides a rich intellectual and cultural life for faculty and students, as well as collegial opportunities in teaching and research. Curriculum vitae, statement of teaching philosophy and research interests, and three letters of recommendation should be sent to: **C. John Burk, Chair, Plant Physiology Search, Department of Biological Sciences, Clark Science Center, Smith College, Northampton, MA 01063**. Applications should be received by November 15, 2000. *Smith College is an Equal Opportunity Employer encouraging excellence through diversity.*

FACULTY POSITIONS DEPARTMENT OF NEUROSCIENCE SCHOOL OF MEDICINE The Johns Hopkins University

Applications are invited for full-time **TENURE-TRACK FACULTY POSITIONS** at both junior and senior levels. Preference will be given to applicants with broad interests in cellular, molecular, and developmental neuroscience, including cellular electrophysiology. Applicants should have a Ph.D. or M.D. and appropriate postdoctoral training. Faculty members are expected to have or to establish active independent research programs and participate in teaching graduate and medical students. Deadline for applications is November 1, 2000.

Please send curriculum vitae, a brief description of current and future research interests, and arrange to have three letters of recommendation sent to:

Solomon H. Snyder, M.D.
Search Committee
Department of Neuroscience
The Johns Hopkins University
School of Medicine
725 North Wolfe Street
Baltimore, MD 21205

An Equal Employment Opportunity/Affirmative Action Employer.

PLANT PHYSIOLOGICAL ECOLOGIST/ECOSYSTEM ECOLOGIST (TERRESTRIAL). Tenure-track **ASSISTANT PROFESSOR**, Rangeland Resources (College of Natural Resources) and Ecology Center, 1 July 2001. Basic collaborative research on ecological consequences of global change in intermountain west rangelands, e.g., climate change, ecosystem-level effects of invasive species, and/or land-use practices, etc. 50% research; 50% teaching. Earned Ph.D. or equivalent at appointment; record of published plant physiological ecology research. See website: <http://personnel.usu.edu/jobs.htm> or contact: **Gene Schupp**; e-mail: schupp@cnr.usu.edu for full announcement and application procedure. Review begins 15 October 2000. *Affirmative Action/Equal Opportunity Employer. Applications from minorities and women are especially encouraged.*

POSITIONS OPEN

ENDOWED PROFESSORSHIP IN MOLECULAR CELL BIOLOGY

Trinity University announces the continuation of a search to fill a newly endowed position, the Brackenridge Distinguished Professorship of Biology. This is a tenured position at the rank of Professor that carries a highly competitive salary and a variety of ancillary benefits. We seek candidates whose research program is widely recognized and extramurally funded and who demonstrate the potential for meaningful and systematic involvement of undergraduates in their research program. The research area is open to any experimental system using molecular methodology to address fundamental problems in cell biology. Possible specialties include but are not limited to development, neurobiology, signal transduction, cell cycle, protein targeting, extracellular matrix, cytoskeleton, endomembrane function, and membrane transport. Demonstrated success in and commitment to undergraduate instruction are required. The successful candidate will be expected to develop a course in contemporary cell biology and possibly contribute to the Biology core curriculum.

Trinity University is a primarily undergraduate educational institution located in San Antonio, Texas. The University enrolls approximately 2,500 students and benefits from a substantial endowment. Additional information about the University and Department of Biology is available at website: www.trinity.edu. Letters of nomination or applications should be sent to: **Professor Thomas L. Koppenheffer, Department of Biology, Trinity University, San Antonio, TX 78212-7200**. In order to receive full consideration, applications should be received by November 1, 2000, although the position will remain open until filled. *Trinity University is an Equal Opportunity/Affirmative Action Employer. We seek and encourage nominations and applications from men and women who would enhance the diversity of the Institution.*

TENURE-TRACK FACULTY POSITIONS BACTERIOLOGY AND IMMUNOLOGY

The Department of Microbiology and Immunology, Wake Forest University School of Medicine, invites applications for a tenure-track **ASSISTANT PROFESSOR** position in bacteriology and a similar position in immunology beginning July 2001. Applicants must have a Ph.D. degree, postdoctoral training in bacteriology or immunology, and documented evidence of high-quality research. Successful candidates will be expected to establish independent research programs and participate in the teaching of graduate and medical students. Information about the Department and its faculty and students may be found at website: www.wfubmc.edu/microbio. Candidates should submit curriculum vitae, a description of future research plans, and arrange for three letters of recommendation to be sent directly to: **Dr. Steven B. Mizel, Chair, Department of Microbiology and Immunology, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157**. *Wake Forest University is an Affirmative Action/Equal Opportunity Employer.*

DEPARTMENT OF PSYCHOLOGY JOHNS HOPKINS UNIVERSITY

Seeks applicants for one or more **TENURE-TRACK OR TENURED POSITIONS** (rank open) beginning July 1, 2001, in each of the following areas of concentration: (1) cognitive psychology, broadly defined; (2) biopsychology/behavioral neuroscience, broadly defined. Send curriculum vitae (including a statement of research and teaching interests), reprints, and (for junior candidates) at least three letters of recommendation to either: **Biopsychology or Cognitive Search Committee, Department of Psychology, Johns Hopkins University, Baltimore, MD 21218-2686**. Website: www.psy.jhu.edu. Review of applications will begin on October 1, 2000. *The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer. Women and members of underrepresented groups are especially encouraged to apply.*

POSITIONS OPEN

FACULTY POSITION IN MOLECULAR IMAGING Departments of Physiology and Radiology Michigan State University

The Departments of Physiology and Radiology invite applications for a full-time tenure-track appointment at the **ASSISTANT/ASSOCIATE PROFESSOR** level. The successful candidate will be expected to develop an independent research program in the area of molecular imaging. Individuals whose research exploits modern NMR techniques as they relate to chronic diseases (e.g., detection of brain function, tumors, and/or cardiovascular disorders) are particularly encouraged to apply. Candidates must hold a Ph.D., M.D., or equivalent doctoral degree; have postdoctoral experience; and demonstrate potential for developing a vigorous externally funded research program and outstanding teaching in the Department's educational program. Interested individuals should provide a complete curriculum vitae, a brief statement of research interests, and copies of key publications. Applicants should also request letters of recommendation from three individuals who can evaluate their accomplishments and future potential for research and teaching. Review of applications will begin October 15, 2000, and continue until the position is filled. Applications should be sent to:

Ronald A. Meyer, Ph.D.
Chairperson, Molecular Imaging Search Committee
Department of Physiology
Michigan State University
East Lansing, MI 48824-1101
E-mail: rmeyer@pilot.msu.edu
Website: www.psl.msu.edu

Michigan State University is an Equal Opportunity/Affirmative Action Employer. Persons with disabilities have the right to request and receive reasonable accommodation.

ASSISTANT PROFESSOR MOLECULAR PHYSIOLOGY

A tenure-track Assistant Professor position is now available in a strong and growing program. Special consideration will be given to candidates with expertise in molecular recognition; however, qualified applicants in other research areas will also be considered. Applicants must have several years of postdoctoral experience and good written and oral communication skills. The person hired will be expected to develop a vigorous, extramurally funded research program and to participate in graduate and undergraduate teaching, including cell biology. Salary, space, start-up funds, and facilities are competitive, and the program is well-equipped with modern instrumentation. Review of applications will begin on October 18, 2000, and continue until the position is filled. Applicants should forward complete curriculum vitae and research prospectus and arrange to have three letters of recommendation sent to: **Dr. Gerald M. Carlson, Head, Division of Molecular Biology and Biochemistry, School of Biological Sciences, University of Missouri-Kansas City, 5100 Rockhill Road, Kansas City, MO 64110-2499**. *An Affirmative Action/Equal Opportunity Employer.*

Instructor, traditional Chinese medicine, Denver, Colorado. Lectures students of traditional Chinese medicine on theory of acupuncture and Chinese botanical medicine, utilizing the traditional Chinese terminology within the context of Western empirical science; supervises students in clinic; and directs and performs research into traditional Chinese medicine methodologies. Requires Master's in acupuncture, oriental medicine, or traditional Chinese medicine and two years of experience in job offered. Must be fluent in written and spoken Mandarin Chinese. \$43,363 per year. Monday through Friday; 9 a.m. to 5 p.m.; 35 hours per week. Please mail résumé to: **Colorado Department of Labor and Employment, Employment Programs, Attention: Jim Shimada, Two Park Central, Suite 400, 1515 Arapahoe Street, Denver, CO 80202-2117**. Job Order Number CO 4675142.

Where your heart and mind go to work.

At the American Red Cross, you'll bring
all your tools to work, every day.

Director, Project Management and Research Support

The American Red Cross has an exciting leadership position available in our **Jerome H. Holland Laboratory** in Rockville, MD. We are seeking a **Director, Project Management and Research Support** to provide oversight for R&D projects and to manage human subjects research compliance, animal research compliance, scientific computer support, and research communications.

Ph.D. degree in Biological Science (or a Master's degree with research experience equivalent to a Ph.D.). Five years' experience in biomedical research and three years' in research management/administration, preferably in human subjects research compliance and/or project management plus three years concurrent supervisory experience. Strong oral and written communication skills are essential.

For prompt consideration please send resume, with salary requirements to:

American Red Cross
Jerome H. Holland Laboratory
Attn: Human Resources Dept. (HL-170)
15601 Crabbs Branch Way
Rockville, MD 20855.

Or e-mail your resume to monicah@usa.redcross.org



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FACULTY POSITION AT MIT DEPARTMENT OF BIOLOGY

MIT is seeking an outstanding scientist with a strong record of research accomplishments for a tenure track position as an **Assistant Professor**. A successful applicant will be expected to develop a significant and independent research program and have a commitment to excellence in undergraduate and graduate education.

The applicant's research program may involve any area of modern biology. We are particularly interested in candidates focusing on mammalian biology and the use of mammalian cellular and/or whole animal model systems.

Applicants should submit a curriculum vitae, including a summary of current and proposed research programs, and should arrange for three letters of recommendation to be sent to:

Biology MBI Search Committee
Attn: Monty Krieger
MIT, Room 68-132
Cambridge, MA 02139

Consideration of completed applications will begin on October 1, 2000.

MIT is an Affirmative Action/Equal Opportunity employer. Qualified women and minority candidates are especially encouraged to apply.

PHARMACIA



Do the research and you'll find this to be **AN AMAZING OPPORTUNITY.**

Discovering new drugs that meet unmet clinical needs is easier when your company is rapidly expanding its career opportunities in Discovery Research, growing its clinical pipeline, and increasing its sales. That's what we're experiencing with the merger of Monsanto/Searle and Pharmacia & Upjohn, where 60,000 professionals have come together to form a \$17 billion first-tier pharma organization: Pharmacia Corporation. By investing more than \$2 billion annually, we are developing one of the strongest R&D engines in the industry.

Our St. Louis facility is committed to the discovery of mechanism-based drugs that target oncology, arthritis, inflammation and cardiovascular diseases. With continued growth in our Medicinal Chemistry Division, we have new positions available in Computational Chemistry. Selected candidates will join a global network of computational chemists who work on drug-discovery projects by interacting with medicinal chemists, pharmacologists, protein biochemists, molecular biologists, and other researchers in a project-oriented, team-based environment.

STRUCTURE-BASED DRUG DESIGN COMPUTATIONAL CHEMIST

The successful candidate will possess demonstrated skills in pharmaceutical lead optimization strategies using protein structural information. Previous experience related to the challenges of focused library design including automated docking techniques, scoring/potential energy functions or pharmacophore mapping is highly desired. Excellent communication skills are expected, as you will interact closely with structural and medicinal chemists in an interdisciplinary, team-based environment. Previous experience in medicinal chemistry or a familiarity with organic chemistry would be a significant asset.

CHEMINFORMATICIST

The selected candidate will work closely with medicinal chemists, biologists, and other computational chemists to apply cheminformatics techniques to problems in areas which may include diversity analysis and library design, large dataset QSAR, pharmacophore perception, pharmacokinetic property prediction, and data-mining. Experience working with medicinal chemists and other scientists in a team-based, pharmaceutical environment is highly desirable.

Requirements for both positions also include a graduate degree (or equivalent experience) in computational chemistry or a related discipline along with good communication skills. Experience in computer programming is desirable.

These positions are available in St. Louis, a family-oriented metropolitan area that supports the arts and sciences. If you are a talented, dedicated scientist with a desire to advance your career by making contributions that will improve human health, contact us today: **Pharmacia Corporation/Monsanto, Ad Code: 99-2977 SM, 700 Chesterfield Pkwy., Mail Zone BB4D, Chesterfield, MO 63198. FAX: 636-737-6419. EEO/AA Employer M/F/D/V**

PHARMACIA

www.pharmacia.com

POSITIONS OPEN

COMMUNITY/ECOSYSTEM ECOLOGIST DEPARTMENT OF BIOLOGY

ASSISTANT/ASSOCIATE PROFESSOR; tenure-track position. Fairfield University seeks applicants for a Community/Ecosystem Ecologist at the level of Assistant or Associate Professor depending on qualifications. We are seeking an Ecologist who uses a combination of field and modeling approaches to study the interaction of organisms with their environment. The successful candidate also will be expected to collaborate with Fairfield University faculty in multidisciplinary research on coastal watersheds and adjoining aquatic ecosystems. Fairfield University is an independent Catholic and Jesuit comprehensive university located on Long Island Sound and has a working relationship with other nearby marine/wetlands institutions. Expected teaching responsibilities include courses in ecology and environmental science. Participation in the introductory biology course, the development of upper-division specialty courses in area of expertise, maintaining an active research program in area of expertise, mentorship of undergraduate students in research, and grant-writing initiatives are expected.

Position to start September 2001. Candidates with a Ph.D., postdoctoral experience, and a strong commitment to undergraduate teaching and research are encouraged to apply. Start-up funds are available. Salary and benefits are competitive. Qualified candidates should send a letter of application that clearly addresses the above qualifications, curriculum vitae, graduate transcripts, statement of teaching goals, and statement of research interests and goals (including how you would involve undergraduates), selected reprints, and arrange for three letters of reference to be sent to: **Search Committee Chair, Community/Ecosystem Ecologist Position, Biology Department, Fairfield University, Fairfield, CT 06430.** The deadline for completed applications is November 1, 2000. *Fairfield University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

EVOLUTIONARY ECOLOGY

Tenure-track **ASSISTANT/ASSOCIATE PROFESSORS**: Evolutionary Ecologists using modern molecular tools to address fundamental ecological and evolutionary questions and having the ability to interact productively with both molecular and environmental faculty. Present strengths in environmental biology include chemical, aquatic, and microbial ecology and sensory biology and physiology. Strengths in molecular and cell biology include cell signaling, structural and mechanistic aspects of DNA replication, regulation of gene expression, and prion proteins. Applicants should send résumé, three letters of reference, up to three reprints, and a statement of research and teaching interests to: **Professor Mark Hay, Evolutionary Ecology Search Committee, School of Biology, Georgia Institute of Technology, Atlanta, GA 30332-0230.** Website: www.biology.gatech.edu. Applications will be considered beginning 30 October 2000. *Georgia Tech is an Equal Education/Employment Opportunity Institution.*

ASSISTANT PROFESSORSHIPS IN INORGANIC, ORGANIC, AND PHYSICAL CHEMISTRY Department of Chemistry and Chemical Biology Harvard University

Applicants are invited to apply for Assistant Professorships in inorganic, organic, and physical chemistry. Applicants should arrange to have three letters of recommendation sent independently and should provide curriculum vitae, a list of publications, and outlines of two future research projects. Applications and supporting materials should be sent to: **Professor James Anderson, Chairman, Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138-2902.** *Harvard University is an Affirmative Action/Equal Opportunity Employer and welcomes applications from women and minority group members.*

POSITIONS OPEN

FACULTY POSITIONS MOLECULAR BIOLOGY

The Institute of Molecular Biology at the University of Oregon (website: <http://www.molbio.uoregon.edu/>) seeks up to four faculty members to begin fall 2001. These appointments will be made through either the Biology Department or the Chemistry Department (Biochemistry Division) as is appropriate to the background and interests of the candidates. We seek outstanding individuals studying fundamental problems in cell biology, genetics, molecular biology, molecular genetics of behavior, structural biology, genomics/proteomics, biochemistry, or biophysics but will consider outstanding applications in other areas. We anticipate filling these positions at the tenure-track **ASSISTANT PROFESSOR** level although more senior candidates will be considered. Interested persons should forward curriculum vitae, statement of research interests/plans, and arrange for three letters of recommendation to be sent by November 10, 2000, to either or both of the following: **Molecular Biology Search, Biology Appointment, Institute of Molecular Biology, University of Oregon, Eugene, OR 97403-1229** and/or **Molecular Biology Search, Biochemistry Appointment, Institute of Molecular Biology, University of Oregon, Eugene, OR 97403-1229.** *The University of Oregon is an Equal Opportunity/Affirmative Action Institution committed to cultural diversity and compliance with the Americans With Disabilities Act.*

IMMUNOLOGY POSTDOCTORAL SCIENTIST/STAFF SCIENTIST

The Virology Program, Naval Medical Research Center, Bethesda, Maryland, is seeking an Immunologist at the Postdoctoral or Staff Scientist level to join a growing team studying the immunology of tropical viral diseases. Our major effort is the development of vaccines to prevent dengue using molecular approaches such as DNA vaccines. We are also exploring the effect of viruses and vaccines on dendritic cells and studying the immunologic correlates of protection and severe disease in dengue and dengue hemorrhagic fever.

Interested candidates should possess a Ph.D. or M.D., at least two years of experience with cytofluorometry and modern immunology techniques, and ability to work with dendritic cells and T lymphocytes. Skills in the design of assays for cytokines and cell-mediated immunity are particularly desired. We are a nonprofit organization providing support services to the military medical community and offer a generous compensation package. Send cover letter and résumé to: **Human Resources Department, Attention: Number 000080, Henry M. Jackson Foundation for the Advancement of Military Medicine, 1401 Rockville Pike, Suite 600, Rockville, MD 20852.** E-mail: hr@hjf.org. *Affirmative Action/Equal Opportunity Employer.*

Princeton University is seeking **POSTDOCTORAL RESEARCHERS** to work on environmental aspects of CO₂ sequestration in deep aquifers. We are seeking outstanding candidates with expertise in one or more of the following areas: computational mechanics and large-scale computing, multiphase flow and contaminant transport, environmental chemistry and experimental geochemistry, environmental risk assessment, and carbon cycling in subsurface environments. The successful candidate(s) will have a strong research record and will demonstrate the ability to work within an interdisciplinary group of scientists and engineers. Please submit curriculum vitae and brief description of prior research experience to: **Professor M. A. Celia, Department of Civil and Environmental Engineering, Princeton University, Princeton, NJ 08544 U.S.A.** E-mail: celia@princeton.edu. *Princeton University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

TENURE-TRACK/TENURED FACULTY POSITIONS IN NEUROBIOLOGY

The Section of Neurobiology seeks to fill one faculty position in systems neurobiology. Investigators studying the interactions, especially various forms of plasticity among neurons in slices as well as *in vivo*, are of particular interest. The Section includes a critical mass of laboratories studying membrane excitability and synaptic function. Applications should be sent to: **Dr. George D. Pollak, Neurobiology Search Committee, Section of Neurobiology, Patterson Laboratories, University of Texas, Austin, TX 78712.** Website: <http://www.biosci.utexas.edu/neuro/>.

A second position is available for studies on alcohol and other drugs of abuse. This position is supported by an endowment of \$500,000. Areas of emphasis for this recruitment are electrophysiological or behavioral approaches to the genetic and molecular basis of addiction. Experience in addiction research is preferred but not essential. An outstanding record of research productivity and accomplishment as well as a strong interest in addiction research are essential. The successful applicant will join Investigators with productive programs in molecular neurobiology and pharmacology. Applications for this position should be sent to: **Dr. Adron Harris, Waggoner Center for Alcohol and Addiction Research, MBB 1.124 (A4800), University of Texas, Austin, TX 78712.** Website: <http://www.utexas.edu/cons/wcaar/>. The Section of Neurobiology will provide attractive start-up packages and has access to extensive core facilities including electron, confocal, and multiphoton microscopy; a mouse genetic engineering facility; protein and DNA sequencing; GC-MS for protein analysis; DNA microarray facility; and excellent laboratory and animal facilities.

For both positions, applicants must have a Ph.D. or similar degree. In addition to developing an independent research program, the faculty member will teach alternate semesters at the graduate and undergraduate levels. Applications will be considered as they arrive but should be received no later than November 17, 2000. They should include curriculum vitae; statement of research plans directly relevant to the areas of emphasis; teaching interests; representative reprints; and the names, telephone numbers, and e-mail addresses of three references. *The University of Texas at Austin is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION CELLULAR AND MOLECULAR PHARMACOLOGY

The Department of Cellular and Molecular Pharmacology at Finch University of Health Sciences/The Chicago Medical School is currently recruiting new faculty. A tenure-track position is available at the **ASSISTANT or ASSOCIATE PROFESSOR** level with the possibility of appointment as **PROFESSOR** for an outstanding candidate. The position requires a Doctoral degree and postdoctoral experience. Candidates with research programs using modern cellular and molecular approaches are encouraged to apply, particularly those interested in the area of drug addiction. Applicants for Assistant Professor are expected to develop an independent, extramurally funded research program. Applicants for Associate Professor or Professor must have an extramurally funded research program. All applicants must have a commitment to excellence in medical and graduate education. Modern laboratory space and competitive salary and start-up packages are available. The Chicago Medical School is located in the picturesque far northern Lake County suburbs of Chicago with access to a rich diversity of cultural, educational, and recreational resources. Applicants should send curriculum vitae, a letter providing research interests and plans, and the names of at least three references to: **Dr. Francis J. White, Professor and Chair, Department of Cellular and Molecular Pharmacology, Finch University of Health Sciences/The Chicago Medical School, 3333 Green Bay Road, North Chicago, IL 60064.** *FUHS/CMS is an Equal Opportunity/Affirmative Action Employer.*



ASSISTANT PROFESSOR IN BEHAVIORAL NEUROGENETICS

The UNIVERSITY OF MINNESOTA - Twin Cities seeks outstanding candidates for a joint faculty position in Neurogenetic Approaches to Behavior shared between the Department of Psychology in the College of Liberal Arts and the Institute of Human Genetics and the Department of Neuroscience in the Academic Health Center. This appointment will be made at the tenure-track Assistant Professor level. Decisions about the tenure home for this position will be determined by a candidate's qualifications and departmental fit. Essential qualifications are a PhD in psychology, neuroscience, genetics or related field, by August 27, 2001, the potential for carrying out outstanding interdisciplinary research, and a commitment to teaching; postdoctoral experience is preferred.

The successful applicant will be expected to carry on an active program of research and scholarship, and contribute to the education and training of graduate and undergraduate students in the Departments of Psychology and Neuroscience. The applicant's research should involve neurogenetic approaches to behavior. We are especially interested in individuals who are studying complex behavioral systems using modern molecular, cellular or genetic methods. These systems may include learning and memory, psychopathology, or emotion. Preference will be given to candidates who bridge interests of existing faculty in the Departments of Psychology and Neuroscience and the Institute of Human Genetics. Teaching responsibilities will include contributions at the undergraduate, graduate and professional levels in the Departments of Psychology and Neuroscience. The applicant selected to fill this position will also be expected to contribute to the service needs of the relevant departments, colleges, and University. Standard teaching and service duties will be divided among the sponsoring departments. Beginning date for this full-time academic faculty position is August 27, 2001. Salary is competitive and will depend on the candidate's qualifications and experience.

This position announcement is available at <http://www.psych.umn.edu> or <http://www.neurosci.umn.edu>. Information about the departments, facilities, and faculty can also be obtained at these web sites. Interested candidates should submit a curriculum vitae, a 500-word statement of research and teaching interests, selected reprints and preprints, and three letters of evaluation to:

Chair, Behavioral Neurogenetics Search Committee, Department of Neuroscience, University of Minnesota
6-145 Jackson Hall, 321 Church Street S.E., Minneapolis, Minnesota 55455 USA or werrb001@tc.umn.edu
Review of applications will begin on October 15, 2000 and continue until the position is filled.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.



DEPARTMENT OF NEUROSCIENCE UNIVERSITY OF MINNESOTA Tenure-Track Assistant Professor Regulation of Gene Expression in the Nervous System

The Department of Neuroscience at the University of Minnesota-Twin Cities is seeking a faculty member to strengthen its existing programs in cellular and molecular neuroscience. The department proposes to hire an assistant professor working on various aspects of the regulation of gene expression in the nervous system including signal transduction, control of transcription, protein targeting, and cell-cell communication. The research areas of interest span the cellular and molecular processes leading from the signals that initiate changes in gene expression and the factors that control transcription in a neuron to the packaging and distributing of the protein products that modify the neuron. The ideal candidate will complement existing departmental strengths in systems neuroscience. Starting date is Fall, 2001. For more information see <http://www.neurosci.umn.edu>.

Applicants must have a Ph.D. and/or M.D. degree. Desired experience includes at least two years of postdoctoral or equivalent experience and a strong publication record. The successful candidate must be able to secure permanent resident status or be a U.S. citizen and will be expected to develop a vigorous, independent research program that will lead to external funding. The ability to interact collaboratively among a variety of disciplines will be strongly encouraged, and teaching of undergraduate, graduate, and/or professional students will be expected. Please send a curriculum vitae, a statement of research interests, and three letters of recommendation that consider both research and teaching potential to:

Search Committee Chair, Regulation of Gene Expression in the Nervous System
Department of Neuroscience, University of Minnesota
6-145 Jackson Hall, 321 Church Street, S.E.
Minneapolis, MN 55455 USA
or hendr056@tc.umn.edu

Electronic versions of the required information may be e-mailed but must be followed with a hard-copy for the official search files. Review of applications will begin on October 15, 2000 and continue until the position is filled.

The University of Minnesota is an equal opportunity educator and employer.

POSITIONS OPEN

BIOLOGY

The Biology Department at Muskingum College invites applications for two tenure-track positions at the rank of **ASSISTANT PROFESSOR** to begin August 2001 for the fall semester. Ph.D. is required; ABDs will be considered.

Position One: anatomy and physiology. Over a two-year cycle, this faculty member will teach an introductory biology class for nonscience majors, an introductory course for biology and other life science majors focusing on the structure and function of vertebrate organ systems, first-year biology laboratory, comparative anatomy, human anatomy, physiology of exercise, and functional histology.

Position Two: neuroscience and cell physiology. Over a two-year cycle, this faculty member will teach an introductory biology class for nonscience majors, an introductory course for biology and neuroscience majors focusing on cell and molecular biology, first-year biology laboratory, advanced neuroscience, and cellular physiology. In addition, it is expected that the individual will contribute to teaching, advising, and establishing a research program within the interdisciplinary neuroscience major.

The Biology Department engages students in the principles of molecular, cellular, genetic, physiological, morphological, and ecological studies within an environment fostering high regard for lifelong scholarship. The successful applicants will be expected to establish research programs that actively involve students in the challenges and rewards of scholarship.

Muskingum is a Presbyterian-affiliated college in east central Ohio having a strong liberal arts tradition. Candidates will be expected to demonstrate a strong interest and proficiency in teaching and a positive disposition to intensive student interaction. Please send curriculum vitae, a letter of application, copies of recent publications, and contact information for three references to: **Dr. Paul Naour, Associate Academic Dean, Muskingum College, New Concord, OH 43762.** Review of applications for both positions will begin October 16, 2000, and continue until the positions are filled. Additional information about the College and Department may be accessed at the college website: www.muskingum.edu.

The Department of Biology at the University of Northern Iowa invites applications for a tenure-track **ASSISTANT PROFESSOR** position effective August 2001. The successful candidate will be expected to develop a research program in biology involving undergraduate and graduate students, to contribute to the general education and graduate programs of the Department, and to teach majors' courses from among the following, depending on the candidate's expertise: animal physiology (junior/senior level), anatomy and physiology laboratory (introductory level), human physiology (junior/senior level), and molecular biology of the cell (sophomore level).

A Ph.D. in a biological science and teaching experience required. ABDs will be considered with evidence of completion by August 1, 2001. Postdoctoral research experience is desired. Faculty members are expected to seek extramural funding. Applications must be received by October 15, 2000, to be given full consideration. Please submit curriculum vitae, undergraduate and graduate transcripts, a statement of research interests and goals, a statement of teaching interests including qualifications to teach courses from the above list, and three letters of reference to:

Dr. Virginia Berg, Chair of Search Committee
Department of Biology
University of Northern Iowa
Cedar Falls, IA 50614-0421
FAX: 319-273-7125
Telephone: 319-273-2770
E-mail: virginia.berg@uni.edu
Website: www.bio.uni.edu

The University of Northern Iowa is an Equal Opportunity Educator and Employer with a comprehensive plan for Affirmative Action. The Department encourages applications from minority persons, women, Vietnam-era veterans, and persons with disabilities.

POSITIONS OPEN

RESEARCH ASSISTANT PROFESSOR AND PROFESSOR DEPARTMENT OF NEUROSCIENCE The Evelyn F. and William L. McKnight Brain Institute of the University of Florida and College of Medicine

The Department of Neuroscience, in conjunction with the Evelyn F. and William L. McKnight Brain Institute of the University of Florida, the University of Florida Shands Cancer Center, and the College of Medicine, is recruiting individuals to fill one **FULL PROFESSOR** and four nontenure-track **RESEARCH ASSISTANT PROFESSOR** positions. We specifically invite applications from outstanding Investigators having demonstrated expertise in neural stem cell biology with emphasis on such areas as gene discovery, proteomics, and translational basic-to-clinical research. Applications for the senior position are particularly being sought from individuals having an established track record in developmental neurobiology and/or cellular/molecular biology of neoplastic growth in the CNS. Candidates for the Research Assistant Professor position are expected to have a Ph.D. or M.D./Ph.D. and a minimum of three years of postdoctoral experience and a demonstrated ability to attract external funding from the private or federal sectors. Applicants for the Full Professor appointment must have existing funding complemented by a history of consistent federal and private support. All applicants will be expected to contribute to the establishment of an outstanding and collaborative Departmental and campuswide program on neural and nonneural stem cell biology that also will be meshed with complementary stem cell research initiatives in the University of Florida Genetics Institute, University of Florida Shands Cancer Center, and the Departments of Pathology and Neurological Surgery of the College of Medicine. Successful candidates also will be expected to contribute to medical and graduate education. The salary for each position will be negotiable and commensurate with related experience. Laboratory and office space for these positions will be provided along with a competitive start-up package.

Applicants should submit their curriculum vitae, a clear statement of research goals, and the names of at least three references to:

Dr. Paul J. Reier
Chair of Neural Stem Cell Biology
Search Committee
Department of Neuroscience
P.O. Box 100244
Evelyn F. and William L. McKnight Brain
Institute of the University of Florida
Gainesville, FL 32610-0244

The completed application should be received by September 29, 2000. An immediate start date is anticipated following selection of the successful candidate(s). *The University of Florida is an Equal Opportunity Employer; minorities and women are especially encouraged to apply.*

ANIMAL PHYSIOLOGIST

Tenure-track position at the **ASSISTANT PROFESSOR** level beginning August 2001 for a broadly trained Physiologist with expertise in any area of current research and a commitment to teaching and research at an undergraduate institution. Candidates must possess a Ph.D. and have the potential to develop a research program involving significant undergraduate participation. Responsibilities include teaching an advanced course addressing fundamentals of modern physiology, participation in the introductory curriculum, and academic advising. Applicants should send curriculum vitae, statement of teaching philosophy, summary of research interests, and names and telephone numbers of three references to: **Professor Thomas L. Koppheffer, Chair, Department of Biology, Trinity University, San Antonio, TX 78212.** Application deadline is October 9, 2000. *Trinity University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are strongly encouraged to apply.*

POSITIONS OPEN

FACULTY POSITIONS DEPARTMENT OF MICROBIOLOGY AND TROPICAL MEDICINE George Washington University Medical Center

The newly created Department of Microbiology and Tropical Medicine (MTM) at The George Washington University is seeking established Investigators for faculty positions in the tenure-track at the **ASSISTANT/ASSOCIATE PROFESSOR/PROFESSOR** level. The mission of the MTM Department will be to conduct both basic and translational research (and training) on microbial and parasitic pathogens and their vectors. The research portfolio of the MTM Department has been recently strengthened through formal linkages with The Institute of Genome Research (TIGR) in Rockville, Maryland. We are particularly interested in qualified applicants in research areas of (1) microbial and vector-borne infectious diseases that afflict developing countries and (2) comparative and functional genomics. However, all areas of medical microbiology, virology, and infectious diseases will be considered.

Qualified applicants should have significant postdoctoral experience and partial salary support through extramural funding. Faculty members will be based on the GWU campus located next to the Foggy Bottom Metro stop (close to the World Bank, Pan American Health Organization, and the State Department). A strong start-up package is provided. Interested applicants should send their curriculum vitae and the names of two potential references (who will be contacted only upon oral/written consent of the applicant) to: **Chair, MTM Search Committee, Department of Microbiology and Tropical Medicine, George Washington University Medical Center, Ross Hall, Room 736, 2300 Eye Street, N.W., Washington, DC 20037. Telephone: 202-994-3532.** Review of applications will begin on October 1, 2000, and continue until position is filled. *The George Washington University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR/PLANT EVOLUTIONARY GENETICIST Department of Biological Sciences Southeastern Louisiana University

The Department of Biological Sciences at Southeastern Louisiana University invites applications for a Plant Scientist involved in evolutionary genetics research for a tenure-track (**ASSISTANT PROFESSOR**) position. We seek an Evolutionary Geneticist working at any phylogenetic level from populations to higher taxa. The applicant should have broad knowledge in plant systematics and be capable of teaching traditional botany, plant taxonomy, and genetics as well as modern plant systematics. The successful candidate will be expected to establish an active research program, participate in our graduate program, and develop undergraduate and graduate courses in botany and their area(s) of expertise. Applicants must have a Ph.D. degree, postdoctoral experience, teaching experience, a strong background in integrative biology, and be committed to excellence in teaching at both the undergraduate and Master's levels. Curriculum vitae, statement of research interests, a summary of teaching philosophy, copies of relevant publications, and three letters of recommendation should be sent to: **Dr. Mark W. Hester, Chair, Plant Geneticist Search Committee, Department of Biological Sciences, Southeastern Louisiana University, Hammond, LA 70402. Website: <http://www.selu.edu/Academics/Depts/Biology/>.** Review of applications will begin October 23, 2000, and continue until a suitable candidate is appointed. Transcripts required upon employment.

POSTDOCTORAL POSITION to study ovarian function. Ph.D. in basic science and minimum of two years of molecular biology and research laboratory experience. Résumé to: **John Yeh, M.D., SUNY at Buffalo, 219 Bryant Street, Buffalo, NY 14222. Telephone: 716-878-7138; FAX: 716-888-3833; e-mail: jyeh@buffalo.edu.**

Unique Opportunity

BioE, an innovative, rapidly growing biotechnology company, has several R&D initiatives utilizing proprietary and patent pending platform technologies with diagnostic applications. Our current product line includes novel cytokine immunoassays, cellular controls, and sample preparation reagents designed for use in flow cytometry, with over 60 products sold worldwide.

Scientist

We are actively seeking two individuals to play key leadership roles on our scientific team. The ideal candidate has a Ph.D., a minimum of 3 to 5 years experience in immunology, genomics or related scientific discipline in an industrial environment. Previous experience with infectious disease, cytokines, hormones, and assay development a plus. Flow cytometry experience highly desirable. This position reports to the Chief Scientific Officer.

BioE offers a competitive salary, attractive benefits package and an opportunity for professional and personal growth. We value creativity, initiative, and people who enjoy a challenge as they grow personally and contribute to the growth of the company. Qualified individuals please mail, fax, or e-mail resume, with salary requirements, to: **Mike Haider, BioE, 4280 Centerville Rd., St. Paul, MN 55127. Equal Opportunity Employer. Fax: 651-426-5740; E-mail: mph@bioe.com.**

Visit us at www.bioe.com.



**NATIONAL UNIVERSITY OF SINGAPORE
DEPARTMENT OF MICROBIOLOGY
Faculty Appointments**

A number of full time tenure-track positions are available at the Department of Microbiology, National University of Singapore for outstanding applicants with strong research experience in any of the following areas: microbial genomics and proteomics, medical mycology, marine microbiology, molecular parasitology (in particular, malaria), yeast genetics, emerging infections, and immune evasion mechanisms of bacteria/viruses. The successful candidates will be able to work in a highly interactive environment to complement and further strengthen the department's highly active research programmes in bacterial genetics, immunology, molecular virology, cancer genetics, antibiotics genes, molecular parasitology and fermentation technology.

The Department of Microbiology has a large graduate student enrolment as well as teaching commitments to medical, dental and science students. The successful candidates will have teaching responsibilities for undergraduate and graduate level courses. Research support core facilities including automated sequencing, FACS analysis, media prep, in situ hybridization, confocal microscopy, etc. are easily available. A number of our staff also have collaborations with nearby research centers such as Johns Hopkins Singapore, Institute of Molecular and Cell Biology and Institute of Molecular Agrobiolology.

Applicants must possess a PhD degree or an approved basic medical degree with a recognised higher academic/professional qualification and academic experience in teaching and research. Appointments are on a 3-year contract in the first instance and will be renewed based on performance. Visiting appointments for one or two years may also be considered.

Interested applicants should send a full CV, together with names and contact addresses/e-mails of 3 referees to:

Professor Chan Soh Ha
Head, Department of Microbiology
National University of Singapore
10 Science Drive
Singapore 119260
Fax: 65-7766872
E-mail: miccsh@nus.edu.sg

Visit our website at <http://www.nus.edu.sg/NUSinfo/Appoint/med-micro.html> for links to information on the department, the University, terms and conditions of service, and the application form.

Only shortlisted candidates will be notified

AWARDS

**Harold M. Weintraub Graduate Student Award
Fred Hutchinson Cancer Research Center**

The Fred Hutchinson Cancer Center is seeking nominations for outstanding Graduate Students for the Harold M. Weintraub Graduate Student Award to recognize outstanding achievement during Graduate Studies in the Biological Sciences. Awardees will participate in a two day scientific symposium honoring Hal Weintraub and his commitment to innovative science.

The second annual Award Symposium will be held May 4-5, 2001. Graduate Student Awardees will be selected from among those nominated on the basis of quality, originality, and significance of their work, as well as to represent a diverse range of research topics. The Hutchinson Center Weintraub and Groudine Fund, established to foster intellectual exchange through the promotion of programs for graduate students, fellows and visiting scholars, will cover expenses for the Graduate Student Awardees.

One nomination may be submitted per Department or Program. A letter of nomination should be submitted by the Department/Program Chairperson and include the student's CV, a one page description of the thesis work conducted, and a recommendation letter from the student's mentor.

Additional information concerning the Award and nomination process can be found at <http://www.fhcr.org/science/basic/weintraub.html>. Questions regarding this Award should be addressed to Susan Parkhurst (susanp@fred.fhcr.org) or Mark Groudine (markg@fred.fhcr.org). The nomination should be submitted by December 15, 2000 to:

**Harold M. Weintraub Graduate Student Award
Fred Hutchinson Cancer Research Center
Division of Basic Sciences; A2M-015
1100 Fairview Avenue North
Seattle, WA 98109-1024**

GRANTS

Bristol-Myers Squibb



Announces a Call for Grant Applications
in the Area of HIV-Associated Metabolic Disturbances.
BMS, as a leader in HIV therapy, recognizes the need to study the pathophysiological mechanisms contributing to HIV-associated lipodystrophy/lipoatrophy and fat redistribution syndrome, and its associated dyslipidemia and metabolic disturbances. Grant proposals examining potential molecular, biochemical, metabolic, immunologic, virologic, and pharmacologic mechanisms will be accepted for review by the BMS Lipodystrophy Basic Science Task Force.

Grant applications can be obtained by contacting:

Yanina Wachtfogel
Chair, BMS Lipodystrophy Basic Science Task Force
Bristol-Myers Squibb Oncology/Immunology
777 Scudders Mill Road
Plainsboro, NJ 08536
(609) 897-3671

POSITIONS OPEN

INVERTEBRATE BIOLOGIST DEPARTMENT OF BIOLOGICAL SCIENCES SMITH COLLEGE

The Smith College Department of Biological Sciences invites applications for a full-time tenure-track **ASSISTANT PROFESSOR** position with a start date of September 1, 2001. Teaching responsibilities include an intermediate-level lecture and laboratory (with field component) course in invertebrate biology, a course in conservation biology, and an advanced-level course in his/her specialty (e.g., seminar in environmental sciences). The successful candidate must have a Ph.D. and will participate actively in the college's Environmental Science and Policy Program. A commitment to undergraduate education and a strong research program with opportunities for undergraduate participation are essential. Teaching and/or postdoctoral experience is preferred; familiarity with GIS technology is a plus. Located in western Massachusetts, Smith College is a leader in the education of women and has a large and active Biological Sciences Department. The Five College Consortium, composed of Smith, Amherst, Mount Holyoke and Hampshire Colleges and the University of Massachusetts, provides a rich intellectual and cultural life for faculty and students, as well as collegial opportunities in teaching and research. Smith faculty are active participants in the Five College Coastal and Marine Sciences Program. Curriculum vitae, statements of teaching philosophy and research interests, and three letters of recommendation should be sent to: **Paulette Peckol, Chair, Invertebrate Biology Search, Department of Biological Sciences, Clark Science Center, Smith College, Northampton, MA 01063.** Applications should be received by December 1, 2000. *Smith College is an Equal Opportunity Employer encouraging excellence through diversity.*

NEUROBIOLOGY KALAMAZOO COLLEGE

Applications are invited for a tenure-track position to begin in the fall of 2001 at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Ph.D. and postdoctoral experience required. Salary is competitive and commensurate with experience. Teaching responsibilities include a neurobiology course and offerings in cellular biology or physiology appropriate to the candidate's interest and curriculum. Kalamazoo College is a highly selective, nationally recognized liberal arts college that takes pride in its outstanding undergraduate science education program. A recent study ranked the College fifth among baccalaureate institutions in the proportion of its graduates who ultimately receive Doctorates in the life sciences. Candidates are expected to have a high aptitude and interest in undergraduate teaching, a commitment to the liberal arts, and a desire to involve undergraduates in scholarship both inside and outside the classroom. Completed applications received before November 1, 2000, will receive full consideration with later applications reviewed as appropriate. Send letter of application, curriculum vitae, undergraduate and graduate transcripts (unofficial is acceptable), statement of teaching philosophy and research interests, and three letters of recommendation to: **Dr. David Evans, Chair, Department of Biology, 1200 Academy Street, Kalamazoo, MI 49006-3295.** *Equal Opportunity Employer. To ensure that its searches consider women and minority candidates, the College especially invites such qualified individuals to apply and identify themselves if they wish.*

RESEARCH ASSOCIATE POSITION at the University of Washington available immediately for NIH-funded research in molecular mechanisms of nucleoside transport. Applicants must have a Ph.D. and experience in standard molecular biology techniques, cell culture, expression systems, and immunolocalization. Send curriculum vitae and three letters of reference by October 8, 2000, to: **Dr. Unadkat, Department of Pharmacetics, Box 357610, University of Washington, Seattle, WA 98195.** E-mail: pceut@u.washington.edu; FAX: 206-543-3204.

POSITIONS OPEN



ASSISTANT PROFESSOR OF PHARMACOLOGY (TENURE-TRACK) DALHOUSIE UNIVERSITY

The Department of Pharmacology is seeking to fill a tenure-track position. The successful applicant will have a Ph.D. and postdoctoral experience. The appointment will commence 1 July 2001 and will be at the level of Assistant Professor. The selected candidate will be expected to teach at the undergraduate and graduate level and submit research grant and scholarship applications. Please send curriculum vitae, three recent reprints, and names and addresses of three references to: **Dr. Melanie E. M. Kelly, Chair, Appointments Committee, Department of Pharmacology, Faculty of Medicine, Dalhousie University, Halifax, Nova Scotia B3H 4H7 Canada.** FAX: 902-494-1388; e-mail: Melanie.Kelly@dal.ca. Further information on the activities in the Department of Pharmacology can be obtained at website: <http://www.medicine.dal.ca/pharmacology/>. Deadline for application: 15 January 2001.

Dalhousie University is an Employment Equity/Affirmative Action Employer. The University encourages applications from qualified aboriginal people, persons with a disability, racially visible persons, and women. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

BOTANIST/ECOLOGIST

Luther College invites applications for a tenure-track appointment at the rank of **ASSISTANT PROFESSOR** beginning September 2001. Teaching responsibilities would include but may not be limited to botany, general ecology, and participation in a team-taught principles of biology course. Ph.D. required; teaching and postdoctoral experience are desirable. Candidate will be expected to direct undergraduate students in botany/ecology research and to seek external funding for research. We are seeking someone who is committed to undergraduate teaching and research in the context of a Lutheran liberal arts college, someone very familiar with the flora of the Midwest, and someone who can contribute to our general education requirement for all students. For more information, visit our department website: www.luther.edu/~biodept. We expect to complete the review of applications by November 1, 2000. Send letter of application, curriculum vitae, three letters of recommendation, and transcripts of undergraduate and graduate work to: **Dr. Jim Eckblad, Head, Department of Biology, Luther College, Decorah, IA 52101-1045.** E-mail: eckbladj@luther.edu. *An Equal Employment Opportunity Employer; women and ethnic minority persons are encouraged to apply.*

PLANT ECOLOGIST OHIO WESLEYAN UNIVERSITY

The Department of Botany-Microbiology at Ohio Wesleyan University seeks a Plant Ecologist for a **TENURE-TRACK POSITION** to begin as early as January 2001. Candidates must have a Ph.D. in an appropriate field, a demonstrated commitment to undergraduate teaching, and a research program amenable to involvement of undergraduate students. Teaching responsibilities include introductory botany, a core course in ecology for the environmental studies program, and an upper-level course in plant ecology (currently alternates between plant community ecology and limnology/paleoecology). Complete applications include curriculum vitae, a statement of teaching and research interests, reprints of selected publications, college transcripts, and three letters of recommendation and should be sent to: **Dr. D. M. Johnson, Department of Botany-Microbiology, Ohio Wesleyan University, Delaware, OH 43015 U.S.A.,** to be received by 10 October 2000. *Ohio Wesleyan is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minorities.*

POSITIONS OPEN

GENETICS AND WILDLIFE BIOLOGY POSITIONS

The Department of Biology invites applications from broadly trained individuals for **ASSISTANT PROFESSOR** tenure-track positions in (1) genetics and (2) wildlife biology beginning fall 2001. Candidates are expected to have a Ph.D. in the biological sciences, excellent verbal and written communication skills, and demonstrate a strong commitment to teaching and research. Postdoctoral experience preferred. Duties include undergraduate and graduate (M.S.) teaching, research, submitting external funding proposals, and service. Departmental information is available at website: www.cst.cmich.edu/units/bio. (1) Genetics. Teaching responsibilities include genetics, cell biology, and specialty course(s). Preference may be given to applicants who can teach biological statistics or electron microscopy. (2) Wildlife biology. Teaching responsibilities include conservation of natural resources, wildlife conservation, and advanced course(s) in wildlife biology. Preference may be given to applicants who can teach biological statistics, environmental contaminants, or wetlands ecology. For both positions, special consideration will be given to candidates who are willing to contribute to the Department's introductory program. Submit a letter of application, résumé, copies of undergraduate and graduate transcripts, statement of teaching philosophy and statement of research interests, and three letters of recommendation to: **Genetics or Wildlife Biologist Search Committee, Department of Biology, Central Michigan University, Mt. Pleasant, MI 48859.** Review of applications will begin October 15, 2000, and continue until positions are filled. *Central Michigan University is an Equal Opportunity/Affirmative Action Employer.*

LECTURERS DEPARTMENT OF NEUROBIOLOGY AND BEHAVIOR University of California, Irvine

The Department of Neurobiology and Behavior is seeking Lecturers to teach major and non-major lecture courses and offer laboratory sections for the 2000/2001 academic year. Examples of courses for which lecturers are being sought are (for majors): neurobiology and behavior, neuropharmacology, and functional neuroanatomy. For non-majors: neurobiology portion of a life sciences course; brain and behavior; drugs and the brain; and brain dysfunction and repair (laboratory), neurobiology, and behavior. Appointments can be part- or full-time and are for one year with a possible renewal. Salaries will be calculated against a full-time base rate of \$35,940. Please send curriculum vitae including information about your teaching experience and your area of interest, along with the names and addresses of three references, to: **Jeffrey Beckwith, Personnel Analyst, Neurobiology and Behavior, 2205 Biology Science II, Irvine, CA 92697-4550.** FAX: 949-824-2447. Visit our Department website: <http://darwin.bio.uci.edu/neurobio/>. Closing date: October 15, 2000.

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

California Institute of Technology invites applications for a tenure-track position as **ASSISTANT PROFESSOR** of chemical physics/physical chemistry, including multidisciplinary areas with experimental and/or theoretical emphasis. The initial appointment is four years. Exceptionally well-qualified applicants may also be considered at the **ASSOCIATE** or **FULL PROFESSOR** level. Outstanding candidates who have completed their Ph.D. and have a strong commitment to research and teaching excellence are encouraged to apply. Submit curriculum vitae, publication list, a concise description of proposed research, and three letters of recommendation by November 15, 2000, to: **Professor Ahmed Zewail, Chair, Faculty Search Committee, Arthur Amos Noyes Laboratory of Chemical Physics, 127-72, California Institute of Technology, Pasadena, CA 91125.** *The California Institute of Technology is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*



The Swiss Federal Institute of Technology Zurich (ETHZ) invites applications for a

**Chair in Pharmaceutical Biology
(Molecular Pharmacognosy)**

at the Department for Applied Biosciences. Research will focus on a significant area of Pharmaceutical Biology such as molecular natural products research, natural product-based targeted drug discovery, molecular biotechnology, biodiversity and ethnopharmacology or quality, efficacy and safety of phytomedicines. Involvement in teaching is required at undergraduate and graduate levels with a special emphasis on pharmacobotanical and phytochemical knowledge and on practical courses in preparation of plant material as well as experimental analytics of natural material.

Candidates should provide evidence of outstanding scientific achievements and present a well-developed, novel and creative research program with a clear emphasis on a biomedical / pharmaceutical focus. They should further work with a strictly interdisciplinary approach. ETH supports modern teaching methods and a commitment in teaching experiments.

Applications with a curriculum vitae, a list of publications and an outline on future teaching and research plans should be submitted to the President of ETH Zurich, Prof. Dr. O. Kübler, ETH-Zentrum, CH-8092 Zürich no later than October 15, 2000. ETHZ specifically encourages female candidates to apply with a view towards increasing the proportion of female professors.



Universität Hamburg

Professorship in Cell Biology and Virology

The Heinrich-Pette-Institut (Faculty of Medicine at the University of Hamburg) invites applications for the position of a full professor (C4) of the department **Cell Biology and Virology**.

The Heinrich-Pette-Institut is an independent research institution, affiliated with the University of Hamburg by a cooperation contract. Candidates will be selected jointly by members of the University of Hamburg (Faculty of Medicine) and the Heinrich-Pette-Institut, according to the rules of the cooperation contract, as this position is a joint appointment as a C4 professor at the University of Hamburg.

Duties:

Her or his main interest should be basic research in the area of cell biology/virology. A cooperation with the existing departments of the institute, the hospital and institutes of the medical faculty is expected. Candidates should have a strong record in obtaining extramural funding.

Teaching obligations:

Two or four lecturing hours.

Employment requirements:

The criteria of § 15 of the University of Hamburg constitution must be fulfilled. Applicants are required to document their teaching qualifications.

Applications with CV, publication list, description of present and future research projects as well as proof of grants obtained so far, should be sent under code no. 1705/4 until 31.10.2000 to the President of the University of Hamburg, Administration - Personnel Department -332.11/12 -, Moorweidenstraße 18, D-20148 Hamburg, Federal Republic of Germany.

TOR ZUR WELT DER WISSENSCHAFT



THE UNIVERSITY
OF QUEENSLAND

Equal opportunity in employment is University policy.

SCHOOL OF BIOMEDICAL SCIENCES

**Lecturer/Senior Lecturer in
Pharmacology/Toxicology
(two positions)**

The Department of Physiology and Pharmacology in the School of Biomedical Sciences is one of the top biomedical research departments in the country with strong research areas in neuroscience, membrane ion transport, endocrinology, cardiovascular biology, pharmacology, toxicology, and drug development. Specific details of research programs can be found at the department's internet address (see below). The department is adjacent to the Institute for Molecular Bioscience which includes the Centre for Drug Design and Development. The department seeks to appoint two Lecturers/Senior Lecturers in Pharmacology and/or Toxicology with demonstrated achievement in research and the potential to be appointed to continuing academic positions.

The successful appointees will hold a PhD or equivalent, and preferably have research expertise that will complement and strengthen the department's research interests in molecular and cellular pharmacology and/or toxicology. The appointees will be expected to establish independent research programs that attract external funding and postgraduate students. They will also be expected to actively participate in the undergraduate and postgraduate teaching and learning programs in pharmacology and/or toxicology. Departmental research support in terms of adequate laboratory space and substantial set-up funds will be provided. Collaboration with other research programs in the department, schools and the Institute for Molecular Bioscience will be encouraged.

The successful applicants will be appointed to continuing positions at Senior Lecturer (Level C) or Lecturer (Level B).

Salary range: A\$62,198 – A\$71,718 per annum for Level C, or A\$50,774 – A\$60,294 per annum for Level B, plus employer superannuation contributions of 17%.

Contact Professor David J. Adams on email dadams@plpk.uq.edu.au, telephone + 61-7-3365-2905 or fax +61-7-3365-1766 to discuss the position or to obtain a position description. Further information about the department can be found at the website <http://www.plpk.uq.edu.au>.

Send nine copies (an original plus eight copies) of your application to the Assistant Personnel Officer, Faculty of Biological and Chemical Sciences, The University of Queensland, Brisbane Qld 4072 Australia. Please quote **Reference No. 47700** and include a curriculum vitae, a statement of research interests and future directions and the names, fax numbers, addresses and email addresses of three (3) referees.

Closing date for applications: 6 October 2000.

WORLD CLASS: BE PART OF IT

POSITIONS OPEN

FACULTY POSITIONS Marine Invertebrate Ecologist Eukaryotic Molecular/Cell Biologist

The Biological Sciences Department at California Polytechnic State University has two tenure-track faculty positions at the **ASSISTANT PROFESSOR** level. Academic-year appointments beginning September 2001. The successful candidate must have a strong commitment to teaching and a productive professional development plan. Student advising and directing students in undergraduate and graduate research (M.S. level) expected. Ph.D. or equivalent required at time of hiring. Salary commensurate with qualifications and experience. Closing date for both positions is November 15, 2000.

Marine Invertebrate Ecologist, Recruitment Code 13005: Primary teaching responsibilities include marine invertebrate ecology, marine resources, introductory biology, and other undergraduate and graduate courses as appropriate. Applicants must have strong quantitative skills. Cross-disciplinary expertise is desirable. Successful candidate is expected to establish active relationships with government agencies and to become knowledgeable in issues related to regional coastal marine resources.

Eukaryotic Molecular/Cell Biologist, Recruitment Code 13006: Primary teaching responsibilities include cell biology, genetics, molecular biology, introductory biology, and other undergraduate and graduate courses as appropriate.

Applicants should submit curriculum vitae, statement of teaching philosophy, statement of professional goals, and arrange to have official transcripts and three letters of recommendation sent to: **Dr. V. L. Holland, Chair, Biological Sciences Department, California Polytechnic State University, San Luis Obispo, CA 93407.** Please refer to Recruitment Code #13005 or #13006 on all correspondence. For more information, visit our website: www.bio.calpoly.edu or contact **Dr. Holland** via e-mail: vholland@calpoly.edu.

California Polytechnic State University is strongly committed to achieving excellence through cultural diversity. The University actively encourages applications and nominations of women, persons of color, applicants with disabilities, and members of other underrepresented groups. Affirmative Action/Equal Employment Opportunity.

FACULTY POSITIONS IN PHYSICS UNIVERSITY OF ILLINOIS AT CHICAGO

The Department of Physics at University of Illinois at Chicago seeks highly qualified applicants for filling faculty positions at the **ASSISTANT PROFESSORSHIP** level. The search focus is on candidates in the areas of condensed matter physics theory (*Electronic Structure, Nanoscience*) and biophysics. Successful candidates will have a Ph.D. degree or equivalent, are expected to develop top-quality research programs, and should show high promise of obtaining external research funding.

Applicants should submit curriculum vitae, a statement of research interests and future plans, and three letters of recommendation to: **Professor Inder P. Batra, Head, Department of Physics, UIC (MC 273), 845 West Taylor Street, Room 2236, Chicago, IL 60607-7059.**

Applications received by November 3, 2000, shall receive fullest consideration. *The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOW UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY

Postdoctoral position available to study nuclear mRNA processing/export in yeast. Please send curriculum vitae and names of three references to: **Dr. M. F. Henry, Department of Molecular Biology, University of Medicine and Dentistry of New Jersey, Two Medical Center Drive, Stratford, NJ 08084.** E-mail: henrymf@umdnj.edu. UMDNJ is an Affirmative Action/Equal Opportunity Employer, Minorities/Females/Disabled/Veterans, and a member of the University Health System of New Jersey.

POSITIONS OPEN

RESEARCH FACULTY POSITIONS MOLECULAR BIOLOGY, PATHOGENESIS, AND EPIDEMIOLOGY

The Public Health Research Institute (PHRI) is seeking appointment of new faculty members to increase the size of our staff at both the junior or senior levels. Candidates must have training and experience of the highest quality and a research program addressing fundamental questions in molecular biology, structural biology, infectious diseases, or epidemiology. The research program must be funded or, in the case of a junior applicant, eminently fundable. The PHRI is an independent, not-for-profit research organization founded in 1942. Its current programs center on basic molecular biology and molecular genetics of disease-causing organisms. The PHRI offers an active, collegial research environment; excellent laboratory facilities; start-up funds; and a generous benefits package. Candidates should submit curriculum vitae, a statement of research interests and accomplishments, and a list of at least three references. PHRI will be moving from New York City to a spacious, newly constructed building containing state-of-the-art facilities including BL3 animal laboratories in the University Heights Science Park in Newark, New Jersey. Detailed information about PHRI can be found at website: www.phri.nyu.edu.

Applications should be sent to: **Dr. Leonard Mindich, Chairman, Recruitment Committee, Public Health Research Institute, 455 First Avenue, New York, NY 10016.**

The PHRI is an Equal Opportunity Employer.

ASSISTANT PROFESSOR DEPARTMENT OF PHARMACOLOGY UNIVERSITY OF WASHINGTON Seattle, Washington

Applications are invited for a tenure-track appointment at the rank of Assistant Professor in the Department of Pharmacology at the University of Washington School of Medicine. A Ph.D. or M.D. degree and at least two years of postdoctoral research experience are required. All areas of research related to pharmacology will be considered, but individuals integrating molecular, genetic, and physiological approaches are especially encouraged to apply. The successful candidate will be expected to develop an outstanding independent research program; teach in graduate, medical, or other health profession courses; and participate in graduate student training. Additional information about the Department and its current research interests may be obtained at website: <http://Departments.washington.edu/phcol/>.

The committee will review applications beginning November 1, 2000. Please submit curriculum vitae, statement of research interests, and arrange for three letters of recommendation to be sent to: **G. Stanley McKnight, Ph.D., Chair, Pharmacology Search Committee, Department of Pharmacology, University of Washington, Box 357750, Seattle, WA 98195-7750.**

The University is an Equal Opportunity/Affirmative Action Employer. The University of Washington is building a culturally diverse faculty and strongly encourages applications from female and minority candidates.

POSTDOCTORAL RESEARCH POSITION DEVELOPMENTAL NEUROBIOLOGY

A Postdoctoral position in developmental neurobiology is available in the Developmental Endocrinology Branch, NICHD, NIH, in Bethesda, Maryland. The project aims at elucidation of molecular mechanisms of steroid hormone and peptide growth factor action in brain development and plasticity. A background in molecular biology and/or microarray technology is desirable. Candidates should have an M.D. or Ph.D. and less than five years of postdoctoral experience. Send curriculum vitae and two letters of recommendation to: **Carolyn Bondy, M.D., Chief, DEB, NICHD, NIH, Building 10, Room 10N262, 10 Center Drive MSC 1862, Bethesda, MD 20892-1862.** NIH is an Equal Opportunity Employer.

POSITIONS OPEN

FACULTY POSITION in physiology: Western University of Health Sciences, College of Osteopathic Medicine of the Pacific invites applications for a full-time tenure-track position at any rank. A Ph.D. in physiology or comparable degree is required. The successful candidate will have a strong commitment to teaching and will participate in the teaching of physiology to medical students. Teaching experience in cell, endocrine, reproductive, and GI physiology at the professional school level is preferred. Preference will be given to candidates with currently funded research or the potential for obtaining extramural funding. Research area is open, but candidates with interests in the general areas of immunology and aging are urged to apply. Salary and rank will be commensurate with qualifications and experience. Review of applications will commence on October 1, 2000, and will continue until the position is filled. Applicants should submit curriculum vitae, statements of teaching and research goals, and arrange for three letters of reference to be submitted. Send material to: **Duane H. Foley, Ph.D., Chair, Physiology Search Committee, Western University of Health Sciences, College of Osteopathic Medicine of the Pacific, 309 East Second Street, Pomona, CA 91766-1889.** *Western University of Health Sciences is an Affirmative Action/Equal Opportunity Employer.*

Chemistry: University of Utah. Two tenure-track positions are available in organic and physical chemistry. Although we intend to fill the positions at the **ASSISTANT PROFESSOR** level, an appointment at the **ASSOCIATE** or **FULL PROFESSOR** level will be considered for exceptional candidates. For the physical position, a research emphasis in condensed-phase, biophysical, or materials-related physical chemistry will best complement our existing research activities. Candidates are expected to demonstrate the background, motivation, and ability to develop vigorous, competitive research programs and to be excellent teachers at the undergraduate and graduate levels. A Ph.D. is required; postdoctoral experience is desirable. Applicants for junior-level positions should send an application letter including a description of proposed research and detailed curriculum vitae and arrange for three letters of recommendation to be sent directly to the address below. Senior applicants should send an application letter and curriculum vitae. Review of applications will begin Monday, October 16, 2000, and continue until suitable candidates are identified. Reply to: **Search Committee, Department of Chemistry, University of Utah, 315 South 1400 East, Room 2020, Salt Lake City, UT 84112-0850.** *The University of Utah is an Affirmative Action/Equal Employment Opportunity Employer, encourages applications from women and minorities, and provides reasonable accommodation to the known disabilities of applicants and employees.*

FACULTY POSITION PHYSICS/BIOPHYSICS UNIVERSITY OF MICHIGAN

The Department of Physics and the Biophysics Research Division jointly seek a candidate to fill a tenure-track **ASSISTANT PROFESSOR** of Physics position in theoretical or experimental biophysics to begin September 2001 or shortly thereafter. We are looking for junior-level Physicists specializing in innovative applications of physical ideas or techniques to important problems in biology including (but not limited to) biocomplexity, self-organization, evolution, bioinformatics, neurobiology, cell function, nanobiology, and single molecule studies. This position offers the possibility of strong interdisciplinary interactions with biophysicists in the Biophysics Research Division, several basic science departments, the Medical and Engineering Schools, and the rapidly developing Life Sciences Initiative at the University. Applicants should send curriculum vitae, a brief research statement, and the names of at least three references to: **Ctirad Uher, Chair, Department of Physics, 2477 Randall Laboratory, University of Michigan, Ann Arbor, MI 48109-1120.** Deadline for applications is January 1, 2001. *The University of Michigan is an Affirmative Action/Equal Opportunity Employer.*

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We are also seeking scientists/engineers to develop tools for understanding genetic regulatory networks. A PhD/MS in the biological and/or computer sciences is required. Experience in computational biology, algorithm development, DNA sequence analysis, and database management desired. Experience in analysis of biological pathways is a plus.

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FAX: 858/457-3202

E-mail: mharper@cistemcorp.com.

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ANNOUNCEMENTS



PRIZE ANNOUNCEMENT

The Bodossaki Foundation has decided to establish, beginning the year 2000, a prize named **The Aristeion Bodossaki Award**. This prize will be awarded every two years to native born Greeks or foreign citizens of greek origin, in recognition of outstanding achievements in the Sciences, Life Sciences, Medicine and Engineering. The **Aristeion** will be accompanied by the sum of 150.000 euros and will be awarded to a scientist who has made original and completed mainstream work of the highest possible quality that has shaped important parts of his or her field and is recognized so, internationally. Nominations of eligible candidates can be submitted to the Bodossaki Foundation until December 31st, 2000.

For further information, please contact :

*The Bodossaki Foundation, 20 Amalias Ave., 10557
Athens, Greece, tel. 01/322-3246, 324-8005, 322-0335,
fax 01/323 7976,
e-mail katerina@bodossaki-foundation.gr*

POSITIONS OPEN

ASSISTANT PROFESSOR OF MICROBIOLOGY

Mount Sinai School of Medicine is a leader in medical research and graduate education. The Department of Microbiology is expanding its research initiatives and is seeking individuals who will develop independent, well-funded research programs in virology. We are particularly interested in candidates studying virus-host interactions and mechanisms of pathogenicity of human viruses, including those of HIV.

Successful candidates will join an active faculty whose research interests focus on molecular genetics of RNA and DNA viruses; mechanisms of virus-host interactions including signal transduction, apoptosis, and antiviral pathways; and viral immunity and viral strategies for evading the immune response. They will also participate in teaching at the graduate and medical school levels. The microbiology training program is multidisciplinary and has a long-standing and successful tradition of educating graduate students. Members of the Department were recently awarded a five-year NIH T32 grant for pre- and postdoctoral trainees in virology. Newly renovated state-of-the-art research facilities are available. Applicants should possess a Ph.D., M.D., or equivalent degree and at least three years of postdoctoral experience. Higher rank appointments will be considered for exceptional circumstances.

Applicants should submit curriculum vitae, a statement of research interest, selected reprints, and names and addresses of three references to: **Chair, Search Committee, Department of Microbiology, Box 1124, Mount Sinai School of Medicine, One Gustave Levy Place, New York, NY 10029-6574. E-mail: micro@mssm.edu. Visit the Department at website: www.mssm.edu/micro. We are an Equal Opportunity Employer fostering diversity in the workplace.**

FACULTY POSITION. The Department of Pharmaceutical Sciences, College of Pharmacy, Idaho State University, invites applications for a nine-month, tenure-track **ASSISTANT/ASSOCIATE PROFESSOR** position. Successful candidate must hold a Ph.D. and have research emphasis in drug metabolism. Ability to teach in the areas of pharmacology and/or medicinal chemistry is required. Candidates able to maintain an extramurally funded research program with evidence of scholarly productivity and with experience in pharmacy education are preferred. The College of Pharmacy offers Pharm.D., M.S., and Ph.D. degrees. Interested individuals should submit an application letter containing a summary of teaching and research interests; curriculum vitae; and the names, addresses, and telephone numbers of three references to: **Adeboye Adejare, Ph.D., Chair, Pharmaceutical Sciences Search Committee, College of Pharmacy, Campus Box 8334, Idaho State University, Pocatello, ID 83209. E-mail: adejare@otc.isu.edu. Review of applications will begin October 15, 2000. Start date is negotiable. Idaho State University is an Equal Opportunity/Affirmative Action Employer.**

RESEARCH SCIENTIST, cell biology. Part of cell and molecular biology team working with disease groups (including oncology) developing and implementing innovative cell-based and molecular biological assays. Cell biology assays include protein analysis (Western and immunoprecipitation, purification of GST fusion protein); *in vitro* cell-based validation assays for potential drug target gene; cell transfection; cell proliferation assay by FACS analysis; and cell migration assays. Perform *in vivo* experiments using mice as model. Molecular biology assays include DNA manipulation (isolation, subcloning); RNA manipulation (isolation); hybridization; molecular cloning (PCR, RT-PCR). Perform validation studies and write report of findings and recommendations. Requirements: M.S. in biology or biochemistry and two years of experience in position or Research Assistant or closely related. Background must include two years of experience in biochemistry and molecular biology and *in vitro/in vivo* cell biology; experience may be gained concurrently. Forty hours per week. Salary commensurate with experience. Résumés to: **Box Number 93.**

POSITIONS OPEN



As seen on numerous television programs including "Nova," "The Discovery Zone," "Science and Technology," "20/20," "COPS," and the "Today Show," infrared imaging technology is becoming pervasive around us. FLIR Systems is the world leader in this exciting new technology. With more than 850 employees and corporate centers in Portland, Oregon, Boston, Massachusetts, and Stockholm, Sweden, FLIR Systems is the product of the merger of the three largest manufacturers of commercial and military infrared systems. Today, FLIR Systems dominates this market with the largest market share, distribution organization, and research and development efforts in the field.

One of the most exciting elements of FLIR's future success is our Life Science Applications product line. These products are used in biotechnology and pharmaceutical manufacturing. We are looking for a creative, talented individual who is interested in maximizing our customers' effectiveness with these powerful tools by serving as the liaison among our customers, our sales force, and our production team. This individual will serve as the technical expert on these products and will take the lead on proposing FLIR solutions for systems and product customizations.

APPLICATIONS SCIENTIST

If you are ready to move out of the laboratory and into the action, this is the position for you! We are currently seeking an Applications Scientist to join our growing company as an important part of our Life Sciences Products Division. In this role, you will be responsible for acquiring and disseminating the applications knowledge developed by our scientific collaborators and needed by our customers. Working closely with our partner, Glaxo Wellcome PLC, you will focus on high-throughput screening of drug compounds (wellplate assays) and animal model assays for metabolic and toxicity screening using infrared technology. This assignment will consist of a four-to-six-month residency training period at Research Triangle Park in North Carolina. At the end of this period, the position will be based north of Boston. To qualify for this exciting position, you must possess a Bachelor's degree in a bioscience discipline as well as two to three years of experience in a commercial pharmaceutical or biotech environment. Excellent interpersonal skills are required as is the ability and desire to travel up to 50 percent. Please submit application materials to: **Human Resources, 16 Esquire Road, North Billerica, MA 01862. FAX: 978-901-8367; e-mail: jobs@flir.com.**

POSTDOCTORAL POSITION is available to study the interaction of Toll-like receptors with iron transport proteins (Nramp1, Nramp2, and HFE) in macrophage-mediated resistance to mycobacterial diseases. Candidates must have a Ph.D. with expertise in immunology, cellular and molecular biology, and cell signaling pathways. Please send curriculum vitae and names of three references to: **Dr. Bruce S. Zwillig, Department of Microbiology, The Ohio State University, 484 West 12th Avenue, Columbus, OH 43210. E-mail: zwillig.1@osu.edu.**

A **POSTDOCTORAL POSITION** is available to study the structural requirements for the substrate specificity of endothelin-converting enzyme (ECE). The project involves generation, expression, and purification of recombinant and chimeric ECE constructs as well as regulation of enzyme trafficking by posttranslational modifications. Contact: **Adviye Ergul, M.D., Ph.D., Medical College of Georgia, CJ-1020, Augusta, GA 30912. Telephone: 706-721-4915; FAX: 706-721-3994; e-mail: aergul@mail.mcgc.edu.**

POSITIONS OPEN

TENURE-TRACK INVESTIGATOR LABORATORY OF IMMUNOGENETICS National Institute of Allergy and Infectious Diseases

The Laboratory of Immunogenetics (LIG), National Institute of Allergy and Infectious Diseases (NIAID), has an opportunity for a tenure-track Investigator to establish an independent research program within the Laboratory. The research in the LIG is broadly focused on the cellular and molecular basis of immune cell activation encompassing a wide spectrum of experimental approaches from the structural biology of immune cell receptors to the cell biology of receptor signaling. For more information about LIG and NIAID intramural programs, see website: <http://www.niaid.nih.gov/dir/>. An ideal candidate would have training in cell biology and imaging, complement existing strengths, and catalyze new avenues of research into immune cell activation. Candidates must have a Ph.D. and/or an M.D. degree. Desired experience includes several years of postdoctoral research or equivalent experience. Successful candidates will have established an outstanding record of research accomplishments reflected in a strong publication record. Curriculum vitae, bibliography, three letters of reference, a detailed statement of research interests, and selected publications must be submitted by November 30, 2000, to: **Dr. Jonathan Yewdell, Chairperson, c/o Lakeasha Mingo, Executive Secretary, Building 10, Room 4A26, 10 Center Drive MSC 1356, Bethesda, MD 20892-1356.** All applicants will be notified either by e-mail or telephone when their application is received. *The NIH is an Equal Opportunity Employer.*

CELL BIOLOGIST

The Department of Biological Sciences at the University of Pittsburgh invites applications for two full-time tenure-track faculty appointments in the area of cell biology to begin September 2001 pending budgetary approval. These appointments are expected to be made at the **ASSISTANT PROFESSOR** level, but experienced candidates with outstanding records will be considered for appointment at higher ranks. Applicants using integrative approaches in modern cell biology are especially encouraged to apply. The successful candidate must have a Ph.D. and extensive postdoctoral experience and will be expected to establish an extramurally funded research program, train graduate students, and participate in undergraduate education. In order to ensure full consideration, applications must be received by November 1, 2000. Applicants should send curriculum vitae along with a summary of research interests and goals and arrange to have at least three letters of reference sent to:

**Dr. Jeffrey L. Brodsky
Cell Biology Search Committee
Department of Biological Sciences
University of Pittsburgh
Pittsburgh, PA 15260
Telephone: 412-624-4266**

Further information on the Department of Biological Sciences is available at website: <http://www.pitt.edu/~biology>. *The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer. Women and members of underrepresented minority groups are especially encouraged to apply.*

POSTDOCTORAL POSITION is available at the Medical University of South Carolina in a laboratory investigating characterization and cloning of genes that regulate the formation and effect of Vitamin D metabolites and characterizing gene mutations that cause rickets, osteoporosis, or abnormal calcium metabolism. A strong background in molecular and cell biology is essential. Curriculum vitae, summary of research interests, and names of three references should be sent to: **Norman H. Bell, M.D., Director, Division of Bone and Mineral Metabolism, Medical University of South Carolina, 114 Doughty Street, P.O. Box 250775, Charleston, SC 29425. E-mail: belln@musc.edu; FAX: 843-876-5163.** *MUSC is an Equal Opportunity Employer.*

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For More Information

Please Contact:

Florian Schoenhammer,
E.B.D. Group, Inc.
6120 Paseo del Norte, Suite J2
Carlsbad, CA, USA
Tel: +1 (760) 930-0500
Fax: +1 (760) 930-0520
fschoenhammer@ebdgroup.com
www.ebdgroup.com

POSITIONS OPEN

TENURE-TRACK FACULTY POSITION STRUCTURAL BIOLOGY

The School of Biological Sciences, University of Missouri-Kansas City (UMKC), invites applications for a tenure-track faculty position (**ASSISTANT** or **ASSOCIATE PROFESSOR**) in X-ray crystallography. Consideration will be given to applicant research areas compatible with but not limited to existing lines of the school's research focus on molecular recognition including macromolecular assembly. We seek an outstanding scholar with demonstrable achievements in research, teaching experience in an English-language institution, and exemplary communication and supervisory skills. Teaching activities will involve participation in at least two of the following disciplines: biophysics, biochemistry, molecular biology, cell biology. State-of-the-art research facilities, including membership in the SER-CAT at APS (Argonne), start-up funds, competitive salary, and fringe benefits are available. Review of applications will begin immediately and will continue until the position is filled. Submit curriculum vitae with summary of present and future research interests and request that three letters of recommendation be forwarded to: **CBB Search Committee, Division of Cell Biology and Biophysics, School of Biological Sciences-BSB 403, University of Missouri-Kansas City, 5100 Rockhill Road, Kansas City, MO 64110-2499. Equal Opportunity/Affirmative Action Employer.**

TROPICAL MARINE SCIENTIST SMITHSONIAN

The Smithsonian Tropical Research Institute has a position available for a Marine Scientist working in any aspect of tropical marine biology or geology. The successful candidate will be expected to help develop the Institute's Caribbean marine station at Bocas del Toro, located within one hour's flight northwest of Panama City, Florida. STRI is building a modern biological station at Bocas del Toro for the use of resident and visiting Scientists as well as students. All branches of marine science will be considered, but a candidate with a program of field research that involves the extensive coral reef/seagrass/mangrove ecosystems in the region or the richly fossiliferous Neogene marine sequences will be preferred. Qualified persons should submit a statement of research; complete curriculum vitae; and addresses, telephone numbers, and e-mail addresses of five references. Review of application will begin on 15 November 2000 and will continue until the position is filled. Send applications to: **Mrs. Luz Latorraca, Office of Human Resources, STRI, Unit 0948, APO AA 34002, U.S.A. Telephone: +01-202-786-2099, extension 8094 (U.S.A.); FAX: +507-212-8150 (Panama); e-mail: latorrac@tivolli.si.edu.** For additional information about STRI, please consult website: <http://www.stri.org>. The appointment will be made without consideration of nationality, creed, race, or gender.

RESEARCH ASSOCIATE EXPERIMENTAL HEMATOLOGY

Two **POSTDOCTORAL POSITIONS** are available in the research laboratory of the Bone Marrow Transplant Program at the University of Colorado Health Science Center. Projects will include translational research approaches to cellular therapy, including *ex vivo* expansion and purification of cord blood stem cells, gene marking protocols, and cellular immunotherapy and phenotype analysis of cultured cells by flow cytometry. A Ph.D. in cell biology, tissue culture, and hematopoietic assay experience is essential. A background in dendritic cell biology and experience in flow cytometry analysis is highly desirable. Starting salary commensurate with experience.

Please submit a letter of interest and curriculum vitae to: **Ian McNiece, Ph.D., 4200 East Ninth Avenue, Box B-116, Denver, CO 80262. FAX: 303-315-0587; e-mail: Ian.McNiece@uchsc.edu.** The application deadline for this position is September 30, 2000.

University of Colorado Health Science Center is an Equal Opportunity/Affirmative Action Employer. We encourage minorities and women to apply for this position.

POSITIONS OPEN



DIRECTOR CONSERVATION RESEARCH FELLOWSHIP PROGRAM

The Nature Conservancy (TNC) seeks a Director for the David H. Smith Conservation Research Fellowship Program. This program awards more than \$1 million annually in fellowships for postdoctoral and visiting scientists to conduct research on pressing conservation problems affecting TNC sites. The Director provides overall leadership and builds, markets, and manages the program. He/she collaborates as part of a TNC team, furthering the general goal of improving conservation through research. The ideal candidate combines strong leadership, management, and communication skills with broad scientific knowledge and a fundamental understanding of how research can help solve real-world conservation problems. Ph.D. in conservation biology, ecology, or related field required. Up to 20% time may be devoted to research at TNC sites. Salary: \$70,000 to \$80,000. Located in Arlington, Virginia (strongly preferred), with frequent travel. Review full posting at website: <http://www.tnc.org> before applying (listed under "Headquarters"). Submit letter, curriculum vitae, and names of three references by 31 October 2000 to: **Dr. E.A. Chornesky, The Nature Conservancy, c/o Environmental Studies Department, Natural Sciences 2, 1156 High Street, University of California, Santa Cruz, CA 95064.**

ALLOGRAFT SCIENTIST

We are a leading provider of human bone and bone connective tissue for transplantation and an innovator in the development and marketing of biomaterial and implant products for musculoskeletal surgery.

In this key position, you will be responsible for the conduct of scientific activities directed toward the support of Osteotech's allograft business. This requires planning, initiating, executing, and directing preclinical research in-house and through external collaborations. Must have strong knowledge of bone biology, bone healing, biomaterials, and be able to apply this to study design and execution. Will contribute to scientific literature; conferences; and presentations to scientists, surgeons, clients, and sales forces. Serves as in-house and outside consultant. May act as spokesperson on corporate research and development and advise top management. Participates in development of patent applications. Some management and professional development responsibilities of the work and general research group. Will have some supervisory duties for a group of technical and support staff. Performs assignments with no instructions on routine work and general instructions on new assignments.

To qualify, you must have a Ph.D., M.D., or D.V.M. with more than five years of relevant work (postdoctoral training, academic, or industrial position). Also requires demonstrated scientific achievements and creativity, including publications, presentations, and/or patents (preferred), along with understanding of bone biology and experience with models of bone repair. May include both *in vitro* and *in vivo* work. Experience with biomaterial, demineralized bone matrix, and/or allograft is preferred.

As a global leader in an exciting, rapidly expanding field, Osteotech offers unparalleled challenge and professional opportunity, along with highly competitive compensation. Position is located in Eatontown, New Jersey (Monmouth County), and offers relocation assistance. To apply, please send curriculum vitae to: **Human Resources, Code AS, Osteotech, Inc., 51 James Way, Eatontown, NJ 07724. FAX: 732-542-9312. Equal Opportunity Employer; Minorities/Females/Disabled/Veterans.**

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR WRIGHT STATE UNIVERSITY

The Department of Biological Sciences at Wright State University invites applications for a tenure-track Assistant or Associate Professor specializing in biology education. This is a joint position between the Departments of Biological Sciences and Teacher Education in the two Colleges of Science and Mathematics (67%) and Education and Human Services (33%). The successful applicant will provide leadership in emerging science and mathematics preservice programs at both the undergraduate and graduate levels. Teaching may also include courses for biology majors, preservice teachers, undergraduates in general education sciences, and/or courses in an area of specialization.

Candidates must have a Ph.D. or an Ed.D. and either a graduate degree in biology or two years of work-related experience in a biological field. To be considered for Associate Professor, candidates must demonstrate the ability to contribute in an outstanding way to scholarly teaching and service functions as defined in the Wright State University faculty handbook. Experience in teaching precollege science is desirable. The successful applicant is expected to have demonstrated scholarship in science education and the ability to obtain extramural funding. A letter of application, curriculum vitae, statements of scholarship and teaching interests, and names of three references should be sent to: **Biology Educator Search Committee, Department of Biological Sciences, Wright State University, Dayton, OH 45435.** For further information, see website: <http://biology.wright.edu>. Review of applications will begin October 15, 2000. Wright State University is an Affirmative Action/Equal Opportunity Employer.

TENURE TRACK ORGANISMAL BIOLOGY

St. Norbert College, a nationally recognized Catholic College in the Norbertine tradition, invites applications for a tenure-track position in organismal biology beginning August 2001. Teaching duties include general biology, advanced courses, and general education. Undergraduate collaborative research expected. Area of expertise could include ichthyology, ornithology, biological diversity, or other zoological fields. Candidate must demonstrate a willingness to contribute to the College's mission. Send application addressing teaching philosophy, research interests, curriculum vitae, and three recommendation letters by November 6, 2000, to: **Tim Flood, Chair, Natural Sciences, St. Norbert College, 100 Grant Street, De Pere, WI 54115. Website: www.snc.edu/bio/. Equal Opportunity Employer.**

ASSISTANT PROFESSOR ENVIRONMENTAL HORTICULTURE

The University of Washington College of Forest Resources invites applications for a nine-month, tenure-track Assistant Professor position or **ASSOCIATE PROFESSOR** under unusual circumstances. Requirements include a Ph.D. in conservation biology, plant ecology, public or restoration horticulture, or urban forestry. Send letter of application, curriculum vitae, research interests, and names and addresses of three references to: **Dr. Kern Ewing, Chair, Search Committee, University of Washington, College of Forest Resources, Box 354115, Seattle, WA 98195-4115. E-mail: kern@u.washington.edu.** Closing date: 1 December 2000. The University of Washington is an Equal Opportunity/Affirmative Action Employer and strongly encourages applications from female and minority candidates.

POSTDOCTORAL POSITIONS available to study biophysical mechanisms of prion diseases and the chaperone action of small heat shock proteins. Strong background in biophysical chemistry of proteins required. Experience in site-directed mutagenesis would be a plus. Send curriculum vitae to: **W. K. Surewicz, Ph.D., Institute of Pathology, Case Western Reserve University, 2085 Adelbert Road, Cleveland, OH 44106. E-mail: wks3@pop.cwru.edu.**



CSIC RECRUITMENT

The Spanish Council for Scientific Research (Consejo Superior de Investigaciones Científicas, CSIC), a public research organisation attached to the Spanish Ministry of Education and Culture, is making an open call for permanent research staff in the following grades:

- **5 new posts of Research Professor**
- **50 new posts of Tenured Scientist**
- **70 posts of interim Tenured Scientist**

The required profiles are in the following research areas

- **Agricultural Sciences.** Genetic and physiological improvement of plants, agricultural modelling, pest control, soil conservation.
- **Biology and Biomedicine** Biotechnology, Developmental Biology, Neurosciences, Bioinformatics, Genomics, Protein structure, etc.
- **Chemistry: Science and Technology.** Environmental Chemistry, Organic synthesis, Catalysis, clean combustion, etc.
- **Humanities and Social Sciences.** Economic Analysis, Demography, Comparative Politics, History, Archaeology, Musicology, Classical languages, Spanish Literature, etc.
- **Materials Science and Technology.** New materials and its characterisation, including nanostructures, polymeric, ceramic, etc.
- **Natural Resources.** Biodiversity, Ecology (evolutionary, marine, molecular), Oceanography, Hydrology, Hydrogeochemistry, Ecotoxicology, etc.
- **Physics: Science and Technology.** Theoretical and High Energy Physics, Astrophysics, Cosmology, Nanotechnology, Microelectronics, Optics, Artificial Intelligence, etc.
- **Food Science and Technology.** Food Biotechnology and Engineering, Food quality, Nutrition, etc.

The posts are open to all scientists, subject to the conditions described in the individual calls to be published very soon in the Spanish Official Gazette (Boletín Oficial del Estado, BOE) and on the CSIC's Web Page : <http://www.csic.es>, where the precise fields for each post will be listed

These posts, together with those from the 1998 and 1999 open calls, give a total of 420 new permanent research positions in the CSIC, for the period 1998-2000. These figures are the result of the sound Institutional policy of human resources developed during the last few years.

POSITIONS OPEN

TENURE-TRACK POSITION BIOCHEMISTRY UNIVERSITY OF DENVER

The Department of Chemistry and Biochemistry at the University of Denver invites applications and nominations for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level. This is a nine-month appointment with primary teaching responsibilities in undergraduate and graduate biochemistry courses. The successful candidate will be expected to develop an externally funded research program in biochemistry, supervise both undergraduate and graduate research students, and teach in one other area of chemistry. Candidates must have completed a Ph.D. in biochemistry or a related field. A detailed description of the Department, its faculty, programs, and facilities may be found at our website: www.du.edu/chemistry.

Applications, nominations, or inquiries concerning this position should be sent to: **Barbara Beckman, Assistant to the Chair, Department of Chemistry and Biochemistry, University of Denver, Denver, CO 80208**. Applicants should send curriculum vitae, a statement of research plans and teaching interests, and have letters from three professional references sent to: **Ms. Beckman**. Review of applications will begin on October 16, 2000, and continue until the position is filled.

The University of Denver is committed to enhancing the diversity of its faculty and staff and encourages applications from women, persons of color, persons with disabilities, and veterans.

POSTDOCTORAL SCIENTIST

Two Postdoctoral Scientist positions available to explore the basic science aspects related to (1) dendritic cell activation and migration and the subsequent effects upon T lymphocytes following topical immunization or (2) mucosal immune response following topical application of vaccines. Experience in dendritic cell immunobiology, cellular immunology, and/or mucosal immunology desirable. Prerequisite: Ph.D. in immunology or related disciplines and an interest in vaccines.

IOMAI Corporation is a biopharmaceutical company that is developing products for use to prevent and/or treat disease using the principles of transcutaneous immunization. Pertinent publications include: *Nature* 391:851, 1998; *J. Immunol.* 161:3211, 1998; *Infect. Immun.* 67:1100, 1999; *Vaccine* 17:S37, 1999; *Infect. Immun.* 68:5306, 2000. For further information about the company, please visit our website: <http://www.iomai.com>.

Please send cover letter and curriculum vitae/résumé (including three references with telephone numbers) to: **Human Resources Department, IOMAI Corporation, 2421 Pennsylvania Avenue, N.W., Suite 300, Washington, DC 20037**. FAX: 202-955-7125; e-mail: jschung@iomai.com.

IOMAI Corporation is an Equal Opportunity Employer and offers competitive compensation and extensive benefit programs.

POSTDOCTORAL POSITION available immediately to study regulation of human apolipoprotein genes by designing and creating apolipoprotein variants for expression and analysis in eukaryotic cell lines. Ph.D. or M.A. in a biological science required. U.S. residents (permanent) or citizens preferred. Send curriculum vitae and names of three references to: **Margaretha Carraway, Ph.D., Department of Biophysics, Boston University School of Medicine, 715 Albany Street, CABR W302, Boston, MA 02118**. E-mail: carraway@med-biophd.bu.edu.

POSTDOCTORAL POSITION available immediately to study *in vitro/in vivo* regulation of gene expression and signal transduction in ocular inflammation. Strong background in cellular/molecular/signal transduction desired. Send curriculum vitae to: **Dr. J. Allen, North Carolina State College of Veterinary Medicine, 4700 Hillsborough Street, Raleigh, NC 27606**. E-mail: janice_allen@ncsu.edu; FAX: 919-515-3044.

POSITIONS OPEN

POSTDOCTORAL POSITIONS MOLECULAR MICROBIAL ECOLOGISTS Oak Ridge National Laboratory

Two Postdoctoral positions are available in Environmental Sciences Division, Oak Ridge National Laboratory (ORNL), for individuals with training in molecular biology, biochemistry, and microbiology. Individuals will participate in developing and using DNA microarray-based genomic technology for analyzing microbial community structure. While the first position will focus on microbial community dynamics related to nitrogen cycling in marine sediments, the second position will emphasize microbial community diversity and structure involved in bioremediation of metals.

Candidates for both positions must have a Ph.D. degree with demonstrated experience in techniques such as gene cloning, gene probe development, and/or phylogenetic analysis. Additional experience is desired in bioinformatics, microarray technology, marine microbial ecology, nutrient cycling, and/or soil biochemistry. The successful applicants will work cooperatively with scientists at ORNL, Michigan State University, University of Washington, Stanford University, Pacific Northwest National Laboratory, and/or Argonne National Laboratory.

Please send curriculum vitae, a description of research accomplishments and interests, and the names and telephone numbers of three references to: **Dr. Jizhong Zhou, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6038**. Telephone: 423-576-7544; FAX: 423-576-8646; e-mail: zhouj@ornl.gov; website: <http://www.esd.ornl.gov/people/zhou/zhou.html>. Applications will be accepted until September 15, 2000, or until the positions are filled. These appointments will be offered through the ORNL Postdoctoral Research Associates Program (website: <http://www.orau.gov/orise/edu/postgrad/ornlpdoc.htm>). This program is open to all qualified U.S. and non-U.S. citizens without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.

POSTDOCTORAL POSITION AT THE SALK INSTITUTE (NEUROSCIENCE)

NIH-funded Postdoctoral position is available at The Salk Institute for Biological Studies to study a novel neural pathway that controls gonadal function. The project involves immunohistochemical and tracing techniques to identify the circuitry of interest and brain microsurgery. Candidates should have a recent Ph.D., a strong background in neuroanatomy, and be familiar with surgical techniques in rodents. Send curriculum vitae and three letters of recommendation to:

**Catherine Rivier, Professor
The Salk Institute
10010 North Torrey Pines Road
La Jolla, CA 92037
FAX: 858-552-1546
E-mail: CRivier@salk.edu**

The Salk Institute is an Equal Opportunity Employer.

POSTDOCTORAL POSITIONS available to study the genetics of hematopoiesis, development, and oncogenesis using molecular biology and gene targeting in mice (see website: <http://www.hms.harvard.edu/dms/bbs/fac/orkin.html>). A strong background in molecular biology is required. Send curriculum vitae and the names, telephone numbers, and e-mail addresses of three references to: **Dr. Stuart Orkin, Division of Hematology, Children's Hospital, 300 Longwood Avenue, Boston, MA 02115**.

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE position available to investigate biochemical mechanisms of genetic resistance to enterotoxigenic *Escherichia coli* (ETEC) infections. Project will involve characterization of the glycoconjugates that serve as receptors for ETEC and identification of genes responsible for susceptibility of ETEC infections. Minimum requirements are Ph.D. in biochemistry, microbiology, or closely related scientific field and excellent communication and interpersonal skills. Experience in glycoconjugate characterization preferred. Starting salary is \$29,818 per year. Fringe benefits (including health insurance) are provided. Send letter of application; current curriculum vitae; and names, e-mail addresses, and telephone numbers of three references to: **Alan K. Erickson, Ph.D., Department of Veterinary Science, P.O. Box 2175, South Dakota State University, Brookings, SD 57007**. E-mail: alan_erickson@sdstate.edu. Affirmative Action/Equal Employment Opportunity Employer/Americans With Disabilities Act reasonable accommodations Telephone: 605-688-6361. TT/Voice Telephone: 605-688-4394.

POSTDOCTORAL POSITION G PROTEIN SIGNALING

A Postdoctoral position is available immediately to study the regulation and actions of G proteins and G protein-coupled receptors in relation to gene expression. Projects will employ immunological and molecular biological techniques, including microinjection, yeast and mammalian cell two-hybrid analysis, reporter gene assay, and immunocytochemistry. A recent Ph.D. with training in basic molecular biological techniques is required. Please submit curriculum vitae, including names and addresses of three references, to: **Dr. David R. Manning, Department of Pharmacology, University of Pennsylvania School of Medicine, 3620 Hamilton Walk, Philadelphia, PA 19104-6084**. E-mail: manning@pharm.med.upenn.edu.

POSTDOCTORAL POSITIONS IN HIV RESEARCH AT THE UNIVERSITY OF TORONTO

Postdoctoral positions are available immediately to study HIV immunopathogenesis and vaccine design. Projects involve the role of cytokine help in the induction and maintenance of HIV-specific CTL responses. A strong background in cellular and molecular immunology is encouraged. Send curriculum vitae and names and e-mail addresses of references to: **Dr. Mario Ostrowski, Clinical Sciences Division, University of Toronto, Medical Sciences Building, Room 6271, 1 King's College Circle, Toronto, Ontario M5S 1A8 Canada**. Telephone: 416-946-5805; FAX: 416-978-8765; e-mail: m.ostrowski@utoronto.ca.

POSTDOCTORAL POSITIONS MOLECULAR CARDIOLOGY

Postdoctoral positions are available to investigate the molecular mechanisms of preconditioning. Approaches include cell culture, isolated mouse heart, ischemia/reperfusion, and gene transfer *in vivo* and *in vitro*. A Ph.D. in physiology/pharmacology/molecular biology with experience in the following areas or techniques is required: ischemia/reperfusion, signal transduction, and molecular biology. Contact: **Dr. Rakesh Kukreja, Professor, Division of Cardiology, Medical College of Virginia Commonwealth University, Box 281, Richmond, VA 23298**. Telephone: 804-828-0389; FAX: 804-828-8700; e-mail: rakesh@c-mail.hsc.vcu.edu.

VIRAL VECTORS/GENE THERAPY HARVARD INSTITUTES OF MEDICINE

Positions available for **POSTDOCTORAL FELLOWS** to work on projects in gene therapy for the CNS and hematopoietic systems. Applicants should have experience in virology, viral vectors, or small animal models. Reply to: **Dr. E. Terwilliger, HIM Room 345, 4 Blackfan Circle, Boston, MA 02215**. E-mail: ErnestT916@aol.com.

AstraZeneca is one of the world's leading pharmaceutical companies, with approximately 50.000 employees. Operations are based on innovative research and development of pharmaceuticals in a number of major therapeutic areas. AstraZeneca has a highly developed marketing organisation around the globe, with a number of world-leading products. Production is conducted in some 20 countries. For further information, see: www.astrazeneca.com.

AstraZeneca R&D Södertälje conducts research and development with focus on the two therapeutic areas CNS and Pain Control. The site has approximately 1.500 employees.

Discovery at AstraZeneca R&D Södertälje is a fully integrated unit comprising of more than 250 staff. Discovery research is carried out at our main site in Södertälje, as well as in Novum Research Park at Huddinge University Hospital.

AstraZeneca has recently announced a new R&D Strategy and following this a number of positions have arisen to further strengthen AstraZeneca R&D Södertälje as a Center of Excellence in Drug Discovery for analgesia and neurological disorders.

The Lead Discovery Department plays a key role in the lead generation process with responsibility for high quality and high speed testing of compounds. We are currently seeking candidates for several positions.

Senior Research Scientist

This position involves a scientific responsibility for our lead discovery projects with focus on G protein-coupled receptors and signal transduction. A successful candidate should have a strong scientific background in molecular pharmacology/biochemistry/cell biology combined with several years of practical experience working with signal transduction and G protein-coupled receptors, preferably in the field of neuroscience. A genuine interest and experience in *in vitro* assay technologies is required for this position.

You should be an enthusiastic, well-motivated scientist with a good ability to supervise other scientists.

Research Scientists

The positions involve working as a member in teams focusing on enzymes, G protein-coupled receptors and ion channels as drug targets. The successful candidates should possess a PhD or BS/MS degree, preferably with several years of research experience in molecular pharmacology/biochemistry/cell biology. Experience and interest in new technologies, such as high capacity assay technologies and/or fluorescent and luminescent based technologies is highly desirable for some of the positions.

Good communication skills, high motivation and commitment to work effectively in a team-based environment are essential for all positions.

For further information, please contact Nina Mohell +46 8 553 281 18 or Åsa Malmberg +46 8 553 286 37.

Your written application, marked "Senior Research Scientist UE" respectively "Research Scientists UE", should be sent to AstraZeneca R&D Södertälje, Ulla Eriksson, Human Resources, 151 85 Södertälje, Sweden. Closing date for applications September 22, 2000.

AstraZeneca 

POSITIONS OPEN

POSTGRADUATE RESEARCHERS DEPARTMENT OF NEUROBIOLOGY AND BEHAVIOR

University of California, Irvine

Postdoctoral positions are periodically available in the Department of Neurobiology and Behavior at the University of California, Irvine. These positions are for one or two years under the sponsorship of the following faculty members: **D. Aswad**, neurochemistry and molecular neurobiology; **L. Cahill**, brain mechanisms of emotion and memory; **T. Carew**, cellular and molecular mechanisms of memory; **C. Cotman**, brain aging, Alzheimer's, cell biology, biochemistry; **R. Frostig**, functional organization of cortex; **C. Gall**, regulation of neuronal gene expression; **R. Josephson**, design of skeletal muscle; **H. Killackey**, developmental neuroanatomy; **F. LaFerla**, Alzheimer's, neural apoptosis, transgenic animal modeling; **M. Leon**, brain development; **J. Marshall**, neuropharmacological approaches to behavioral analysis; **J. McGaugh**, neurobiology of learning and memory; **R. Metherate**, synaptic physiology and plasticity in sensory neuroprocesses; **R. Mileti**, molecular neurobiology and physiology of ion channels and receptors; **I. Parker**, intracellular calcium and cell signaling; **G. Sperling**, cognition, vision, and visual perception; **O. Steward**, mechanisms of synapse growth and plasticity; **G. Striedter**, neuroethology, behavioral neuroscience, evolutionary neurobiology; **K. Sumikawa**, molecular neurobiology of synapses; **N. Weinberger**, neural bases of attention and learning; **J. Weiss**, excitatory amino acids in neural signaling and neurodegeneration; **P. Yahr**, behavioral neuroendocrinology. Please send curriculum vitae along with names and addresses of three references to: **Jeffrey Beckwith, Personnel Analyst, Neurobiology and Behavior, 2205 Biology Science II, Irvine, CA 92697-4550. FAX: 949-824-2447. Visit our Department website: <http://darwin.bio.uci.edu/neurobio/>.**

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

POSTDOCTORAL RESEARCH ASSOCIATES

The Medical Department of Brookhaven National Laboratory presently has three Postdoctoral positions available immediately on a newly funded project to study new antisense oligonucleotide analogues and agents for imaging gene expression *in vivo*. The biochemistry, *in vitro* and *in vivo* behavior, and biodistribution and radiolabeling chemistry (with PET/SPECT isotopes) of antisense oligomers will be investigated. Applicants should have experience in one or more of the following: cell biology, radiochemistry, tissue culture, drug pharmacokinetics/biodistribution. The project is an interdisciplinary collaboration among the Medical, Chemistry, and Biology Departments at the Laboratory and offers broad-based training in a well-funded environment.

Interested candidates should send their curriculum vitae and names of references to: **M. Kipperman, Brookhaven National Laboratory, Building 185, P.O. Box 5000, Upton, NY 11973-5000. Further information may be obtained from: Dr. S. J. Gately; e-mail: gately@bnl.gov. Brookhaven National Laboratory is an Equal Opportunity Employer committed to workforce diversity.**

Molecular biology and genetics **POSTDOCTORAL/RESEARCH ASSOCIATE**: Several positions are available as part of an interdisciplinary research team using advanced technologies to determine how chromatin structure mediates development. Self-motivated individuals trained in molecular biology, genetics, and/or biochemistry are encouraged to apply. Applicants should forward their curriculum vitae and three letters of recommendation to: **Dr. Stephen Krawetz, Department of Obstetrics/Gynecology and CMMG, Wayne State University School of Medicine, 275 East Hancock, Detroit, MI 48201.**

Wayne State University is an Equal Opportunity/Affirmative Action Employer. All buildings, structures, and vehicles at Wayne State University are smoke free. Wayne State University: people working together to provide quality service.

POSITIONS OPEN

Trauma Research is looking for two **POSTDOCTORAL SCIENTISTS** to study physiological and molecular mechanisms of systemic inflammation with emphases on fever and septic shock. One position is for a junior Thermophysicist with good surgical skills. A background in electrophysiology, neuroanatomy, math, or computers is a plus. This person will perform high-volume surgeries in rats and mice, run physiological experiments with thermocouple thermometry and biotelemetry, have an opportunity to use a multilane temperature gradient, and be responsible for the animal aspect of current molecular biological projects. The second position is for a Neuroscientist or Systems Physiologist experienced in histochemistry or immunoassays. Familiarity with the biochemistry of LPS, basic microbiology, and innate immunology is an advantage. This person will conduct relatively independent research in small animals along his/her lines of excellence and apply *ex vivo* methods to study sepsis and trauma disease in humans. Excellent writing skills are expected. For both positions, the requirements include an advanced degree and a track record of peer-reviewed publications. The ability to think independently and dedication to work are more important than any particular skill. Both appointments are initially for one year. Titles and salaries are negotiable. Send curriculum vitae; reprints of full-length papers; description of research interests and career goals; and names, e-mail addresses, and telephone numbers of at least two references to: **A. A. Romanovsky, M.D., Ph.D., Senior Staff Scientist and Director, Trauma Research, St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, AZ 85013. E-mail: aromano@chw.edu. Equal Opportunity Employer.**

POSTDOCTORAL FELLOWSHIP NATIONAL CANCER INSTITUTE

Several Postdoctoral training positions are available in the Department of Cell and Cancer Biology at the NCI/NIH, Bethesda, Maryland. Ongoing projects include:

Dr. Geoff Clark: characterization of novel Ras oncogene effectors and Ras-related proteins.

Dr. Len Neckers: examining the role of Hsp90 in cell signaling; characterizing novel inhibitors of Hsp90.

Dr. Mike Birrer: role of AP-1 transcription complexes in cancer.

Salary will be commensurate with experience, commencing at more than \$30,000 plus benefits. Applicants should send their curriculum vitae to the appropriate Principal Investigator at:

NCI

Department of Cell and Cancer Biology
9610 Medical Center Drive, Room 300
Rockville, MD 20850-3300 U.S.A.

E-mail: Clarkg@pop.nci.nih.gov

Len@helix.nih.gov

Birrer@bpr.nci.nih.gov

Selections for these positions will be based solely on merit, with no discrimination for nonmerit reasons such as race, color, religion, gender, national origin, politics, marital status, physical or mental disability, age, sexual orientation, or membership or nonmembership in an employee organization. The National Cancer Institute is an Equal Employment Opportunity/Affirmative Action Employer that values and fosters diversity throughout the entire organization.

POSTDOCTORAL POSITIONS in neuroscience available immediately to study synaptic transmission (*Nature* 381:793, 1996) and modulation (*Nature* 389:749, 1997) in the spinal cord and molecular mechanisms of pain. Experiences in patch clamp recordings or molecular biology required. Our laboratory is equipped with state-of-the-art electrophysiological setups for studies on neuronal cultures and slice preparations. Funding available from NIH and other sources. Salary negotiable based on qualifications. Send curriculum vitae to: **Dr. J. G. Gu, McKnight Brain Institute of the University of Florida, Box 100416, University of Florida, Gainesville, FL 32610. E-mail: jgu@dental.ufl.edu.**

POSITIONS OPEN

POSTDOCTORAL POSITION

Postdoctoral positions are available immediately to study the mechanisms and function of signal transduction activated by chemokines and Wnt using various modern research approaches (*Science* 287:1046; *EMBO* 18:4233; *JBC* 274:30419). Self-motivated individuals trained in molecular and cell biology, genetics, and/or biochemistry are encouraged to apply. Send curriculum vitae to:

Dr. Dianqing Wu

Department of Genetics and Developmental Biology
University of Connecticut Health Center
263 Farmington Avenue, MC 3301
Farmington, CT 06030-3301
E-mail: Dwu@neuron.uchc.edu

POSTDOCTORAL FELLOWSHIP immediately available for studies on skeletal muscle development. The focus is on early expression of genes associated with establishing myogenesis, the signaling molecules involved, and the commitment of mesodermal cells to a myogenic fate and patterning. Position open to United States citizens or permanent residents. Send curriculum vitae and letters of reference to:

Frank E. Stockdale, M.D., Ph.D.

Stanford University School of Medicine
CCSR Building, Room 115
269 Campus Drive
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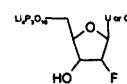
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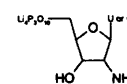
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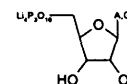
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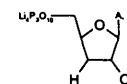
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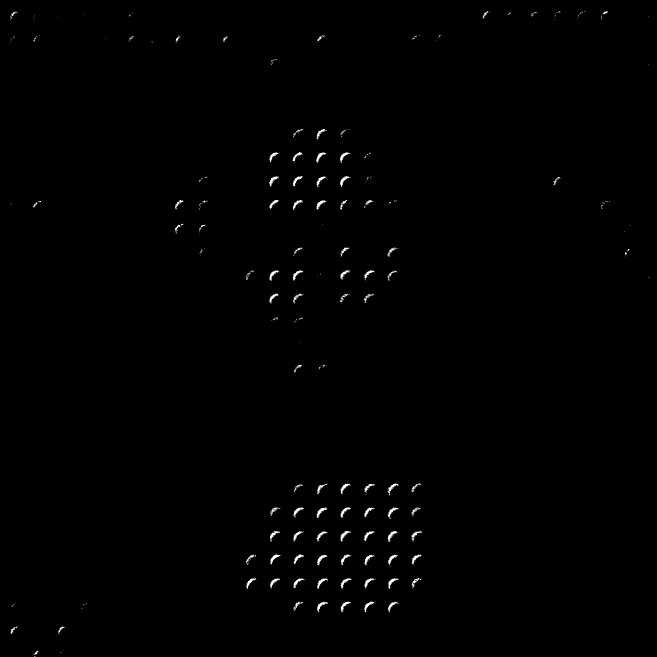
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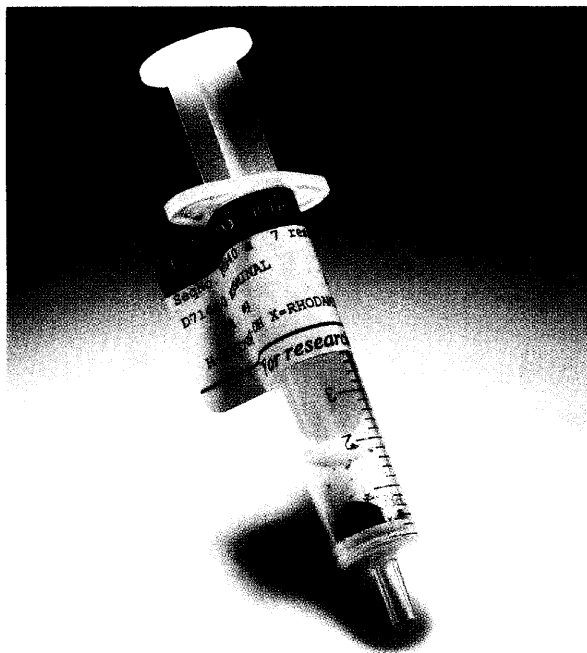
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