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

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Tables should be included at the end of the references and should supplement, not duplicate, the text. Each table should be on a separate page with its legend double-spaced above the table. The first sentence of the legend should be a brief descriptive title. Every vertical column should have a heading consisting of a title with the unit of measure in parentheses. Units should not change within a column.

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Lettering in Helvetica font is preferable for figures. Use boldface type for axis labels and for the labels A, B, C in composite figures; use italic type only as it would be used in the text (for example, for variables and genes). The first letter of each entry should be uppercase; otherwise, use uppercase letters as they would be used in the text (for example, for acronyms).

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In what is being called the "post-genomics era," microarray analysis is used to discover and understand complex patterns of gene expression. Although there are software applications that identify significantly up- and down-regulated genes as well as cluster groups of genes with similar regulatory responses, researchers must still interpret the results in terms of the known metabolic and cellular pathways. GenMAPP (Gene MicroArray Pathway Profiler) is a new software tool for Windows computers that illustrates gene expression data for metabolically related groups of genes. The program and data files may be downloaded from the Web site.

The imaging of expression data takes place on a MAPP, a diagram showing biological relations between genes or gene products based on organizing principles, such as metabolic pathways, signal transduction cascades, subcellular locations, or gene lists. Several hundred MAPPs are available for download.

The program also supports user creation of MAPPs. Graphical objects are provided, which the user can place and manipulate on a "drafting board." These include general objects, such as lines and arrows, as well as biological items, such as receptor and ligand binding symbols and subcellular components. The most important object is the "gene," which represents a gene or gene product. The result of a GenMAPP analysis is a MAPP where the gene objects can be color-coded and labeled based on expression data. For example, a MAPP may show genes that are up-regulated twofold in red and genes that are down-regulated twofold in blue.

The gene object plays the central role because it links the MAPP, GenMAPP Database, and Expression Dataset. A GenMAPP Database is a gene library that includes annotation and hyperlink information. When building a MAPP, a gene may be specified by its SwissProt/TrEMBL or GenBank identifier, in which case all of the information for the gene is obtained from the database. Information for genes not in the database may be entered by the user.

The Expression Dataset is a special file created by GenMAPP. User data is imported in a generic file format in which the first line contains column headers, each row holds the information for a gene, and each column is a different variable. GenMAPP lets the user define one or more Gene Color Sets, each of which contains instructions for how to display data from an Expression Dataset on MAPPs. A Color Set may have many rules, each using combinations of relational and Boolean operators, and may reference any of the variables in the Dataset.

MAPP files and Expression Datasets are independent files that may be exchanged among investigators and can be exported in image or HTML formats. In the latter case, GenMAPP builds an HTML page of the MAPP and a set of gene pages, complete with hyperlinks. The GenMAPP organization and users of GenMAPP will surely make new MAPPs, increasing the number of MAPPs available to the scientific community with time.

—John B. Spalding

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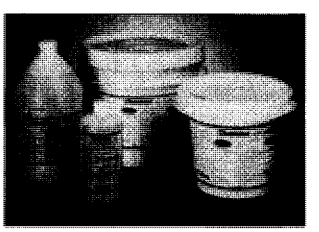

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CONTINUED ON PAGE 154

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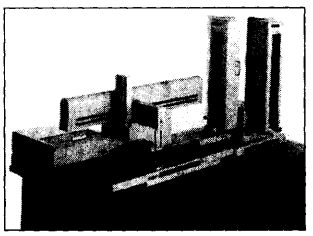

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LABORATORY TECHNOLOGY TRENDS:

DNA and Biochips: 1

THE MAKING OF A MICROARRAY

When prepared properly, DNA chips and microarrays permit researchers to gather more data in less time. Here's a guide to the steps in making chips and the products that simplify the process.

BY PETER GWYNNE AND GARY HEEBNER

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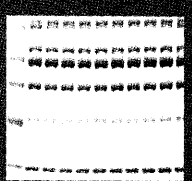
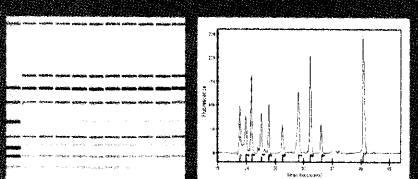


Conventional gel electrophoresis



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LABORATORY TECHNOLOGY TRENDS:

DNA and Biochips: I

>>In just over a decade since their conception, DNA chips and microarrays have proven their value in genomics research and have forever changed the way in which molecular biologists approach their research. The rush to capitalize on information produced by the sequencing of the human genome is well under way, with researchers from many disciplines already acknowledging the power of these miniature laboratories on a slide. These early adopters have begun to reap the basic benefits from DNA microarrays: more data in less time.

>>DNA chips and microarrays allow the simultaneous examination of thousands of strands of DNA. At times, indeed, they create overpowering amounts of data. Thus the utility of these new laboratory tools depends on strong support from information technology. Fortunately advances in that sector have enabled the development of the powerful computer software programs necessary to make sense of such large volumes of data.

SECTIONS:

This is the first of a two-part series. The second part, which will focus on protein microarrays and lab-on-a-chip technologies, will appear in the 10 May 2002 issue of Science.

The companies in this article were selected at random. Their inclusion in this article does not indicate endorsement by either AAAS or Science, nor is it meant to imply that their products or services are superior to those of other companies.

AN EXPANDING BUSINESS

Backed up by suitable software, DNA microarrays have clearly become extremely valuable research tools. As such, they play a key role in gene discovery, disease diagnosis, and drug discovery. "This is one of the handful of technologies that are applicable in the entire scope of R&D, from drug discovery through development," says Keith Dionne, vice president and general manager of technology business for **Millennium Pharmaceuticals, Inc.**

Potential users see huge promise in the technology. "The microarray market is not mature yet," says Siobhan Pickett, product line manager, array technology for **Axon Instruments, Inc.** "What's happening is that the early adopters and innovators are now moving into a mature phase in which they have the technology that's helping them to move forward to the next stages of their research. The market will grow in the near future as microarrays become a much more standardized technology in many types of life science laboratory, like gel electrophoresis and DNA sequencing."

The market already appeals to a broad range of consumers. "We originally assumed that our customers would be predominantly in the biopharmaceutical area," says Doug Amorese, section manager for biochemistry and chemistry in **Agilent Technologies, Inc.'s** Bio Research Solutions division. "We've been very pleasantly surprised by the demand in the academic and agricultural areas. This technology is being used across the board as it has matured to deliver lower costs and better product offerings."

John Burzcak, vice president for development of genomics at **Amersham Biosciences** (formerly Amersham Pharmacia Biotech), echoes that thought. "Pharmaceutical and life science companies have strongly embraced microarray technology," he says. "In the academic environment, microarray capabilities have been established in core laboratories that service individual investigators. As the technology matures, investigators' laboratories are clearly purchasing the tools for postspotting work, such as microarray hybridization reagents, kits, and instruments, as well as microarray scanners."

Further development of microarraying, and particularly of methods for interpreting the information that the method produces, will expand the technology's utility. "Now that the technique is developed you can optimize it," explains Horst Donner, head of R&D microarrays at German firm **MWG Biotech AG**. "However, it's not the technology but making sense of the data that will open the way to more use of microarrays. I'm convinced that the technology will soon find clinical applications."

THE BIG BOTTLENECK

Dealing with data has emerged as the key issue for vendors and users of DNA microarray technology. "The data analysis portion of a microarray experiment can in many ways be the most challenging part," says John Quakenbush, an associate investigator at **The Institute for Genomic Research** (TIGR). "The big bottleneck in microarray work is data analysis – the ability to assign quality and statistically analyze a massive amount of data from multiple slides and experimental conditions," adds Burzcak of Amersham Biosciences. "'Power users' such as pharmaceutical companies have created bioinformatic departments to service investigators. And as academic investigators push into analysis of large data sets, they may require core bioinformatic services."

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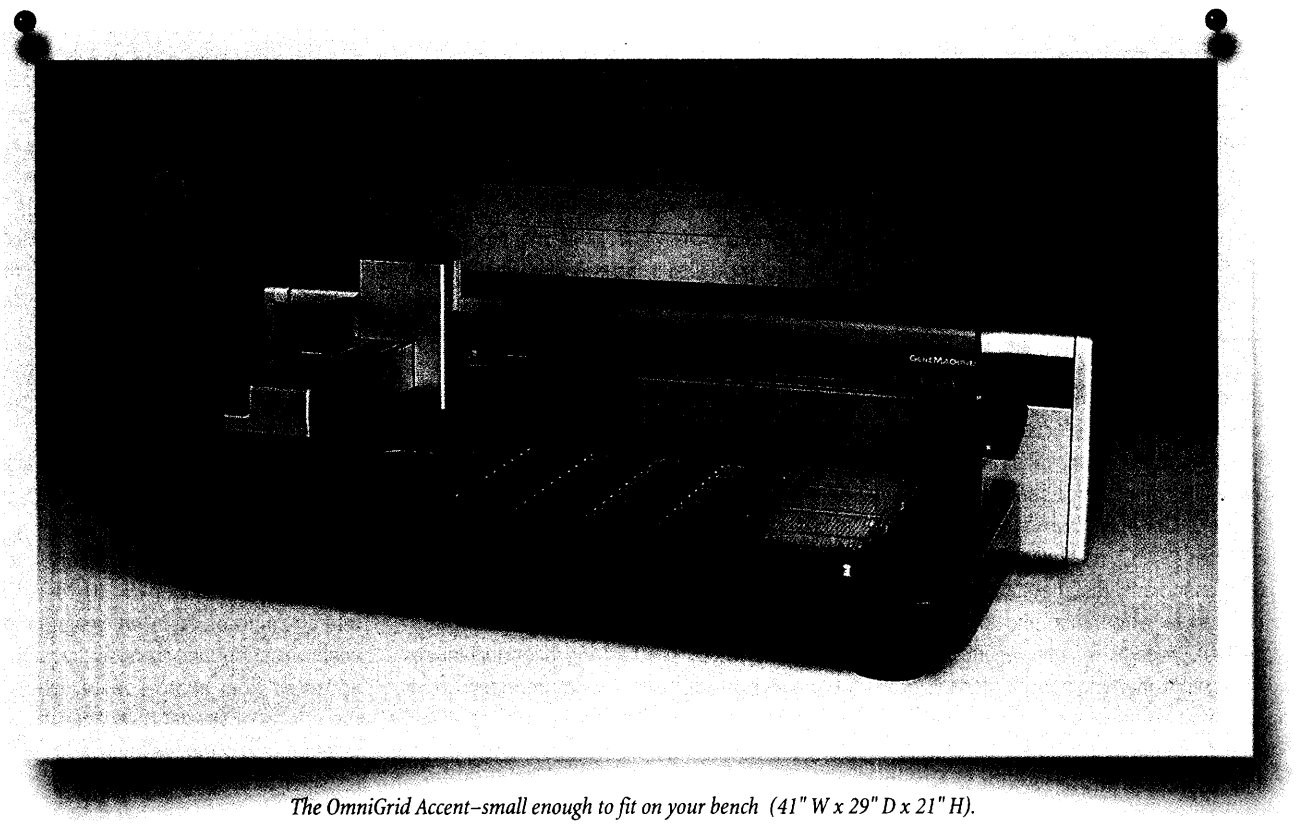

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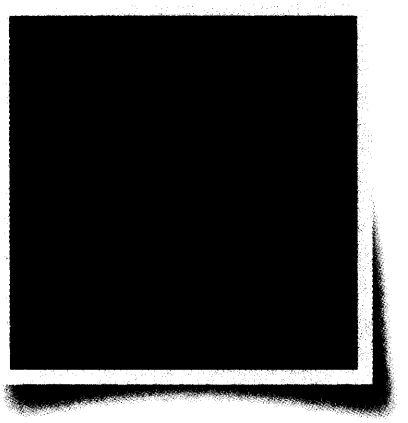

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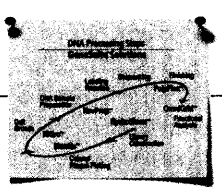

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Another factor essential to expansion of the industry is standardization of bioinformatics and many other aspects of microarray technology. Vendors of microarray systems and components face a situation similar to that encountered by computer companies 20 years ago, when they decided to move away from proprietary technologies to open systems. "The needs and interests of the scientific community will drive standardization," says Axon's Pickett. "But they are also looking for guidelines from the product suppliers. So the most successful standards will result from collaborative efforts between companies such as Axon and their customers."

Already **Affymetrix, Inc.**, and **Molecular Dynamics**, a division of Amersham Biosciences, have formed the **Genetic Analysis Technology Consortium** (GATC). Its goal: to standardize array based genetic analysis, thereby paving the way for the more affordable and productive development of products for therapeutics, diagnostics, and disease management. It plans to do so by agreeing on a unified technology platform to design, process, read, and analyze DNA arrays. Researchers should benefit as GATC-compliant probe arrays, readers, reagents, and software and database architectures will eliminate the need for redundant equipment and software.

Few companies in the DNA chip business offer complete systems for working with DNA chips. Rather, most have focused on specific areas of technology and offer a limited range of products. Although this helps the companies to master their respective arts, it poses problems for researchers who need to assemble the pieces in their laboratories. Two notable exceptions are market pioneer Affymetrix and Agilent, which recently introduced a complete solution from arrays and labeling reagents to scanner and analysis software.

In addition, several companies have recently decided to work together to offer bundles of compatible microarray products. **GeneMachines**, a vendor of DNA synthesizers, microarray printers, and pens for spotting microarrays, provides an example. "We work very closely with several scanner manufacturers," says president and CEO Scott Hunicke-Smith. "We believe the market wants one-stop shopping, including the bioinformatics software needed to interpret microarray data."

TWO TYPES OF CHIPS

The terms DNA chip and microarray are often used interchangeably. Strictly speaking, chips (or macroarrays) usually have a lower density of spots or features per unit area while microarrays have a higher density. In fact, microarrays can contain as many as several hundred thousand spots per slide. DNA is not the only raw material for biochips. Other types under development and in research laboratories include protein chips, antibody chips, and other lab-on-a-chip devices that are the result of miniaturization efforts. This article will focus exclusively on DNA chips and microarrays.

The two basic types of DNA chips are differentiated by their method of production. One involves synthesizing oligonucleotides on a chip. The second spots presynthesized DNA (amplicons or oligonucleotides) onto a chip or glass slide.

Affymetrix originally developed oligonucleotide arrays by synthesizing oligonucleotides on a wafer or chip using a patented method for manufacturing integrated circuit chips borrowed from the semiconductor industry. The process involves using photolithography to add nucleic acid bases selectively to predetermined spots on the chip. This process enables the *in situ* (on a slide) creation of oligonucleotides up to 20 or so bases in length. This approach has one main disadvantage: high cost. Producing such a mask requires a substantial financial investment. Further, photolithographic masks cannot be altered to produce arrays with different oligos without incurring further cost.

Agilent has developed an alternative method. Exploiting its technological heritage, the company uses inkjets to deliver traditional phosphoramides and activaters to discrete locations on a modified glass support. By using traditional chemistries with high coupling efficiencies, Agilent can offer arrays of oligos 60 nucleotides in length by an *in situ* process.

With its series of GeneChip products, Affymetrix is one of several companies that cater to researchers who do not wish to master the art of making their own chips. Other firms offering DNA microarrays ready to use for popular applications include **Clontech Laboratories** and **Azign Bioscience A/S** (formerly Display Systems Biotech), whose discoverARRAY slides have over 2,400 expressed fragments of complementary DNA (cDNA). **Mergen Ltd.** also provides such arrays.

A second method of producing a DNA chip involves spotting DNA (again amplicons or oligonucleotides) onto a slide. Users can obtain the cDNA from libraries or produce it from the mRNA (messenger RNA) of a cell. Pat Brown of **Stanford University** pioneered this process. The Brown laboratory has gained a worldwide reputation for its promotion of DNA chips. Its website features a wealth of information on how to make and use DNA chips.

Producing a cDNA chip requires an intermediate step that Affymetrix's production method doesn't need: the use of reverse transcriptase polymerase to generate a library and the polymerase chain reaction (PCR) to convert cDNA into an amplicon. In recent years the polymerase chain reaction and reverse transcriptase have advanced from art to science, largely owing to the efforts of several companies to create more reliable ways of amplifying nucleic acids. Suppliers such as Amersham Biosciences, **Invitrogen**, **Promega**, **QIAGEN**, and **Stratagene** have developed kits and complete systems that have taken much of the trial and error out of amplifying DNA or RNA. "For individuals who don't want to make their own PCR products we offer ready-to-spot human PCRs," says Becky Mullinax, senior staff scientist at Stratagene. "We'll do the same for mouse PCRs in the middle of this year."

OLIGOS' EMERGENCE

The oligo approach is undergoing development as vendors develop new methods of depositing oligonucleotides. Thus **QIAGEN Operon**, a fully-owned subsidiary of QIAGEN, offers custom oligonucleotides in amounts, concentrations, and plate formats specified by customers. "QIAGEN Operon produces oligos that can be spotted," says Martin Potgeter, QIAGEN's strategic marketing manager for array systems. "We can offer selected oligos for genes. We have an oligo center with more than 50,000 human genes so that people can pick and spot their own." Agilent also prepares custom arrays. "We have software tools that allow one to design probes to nearly any length,"

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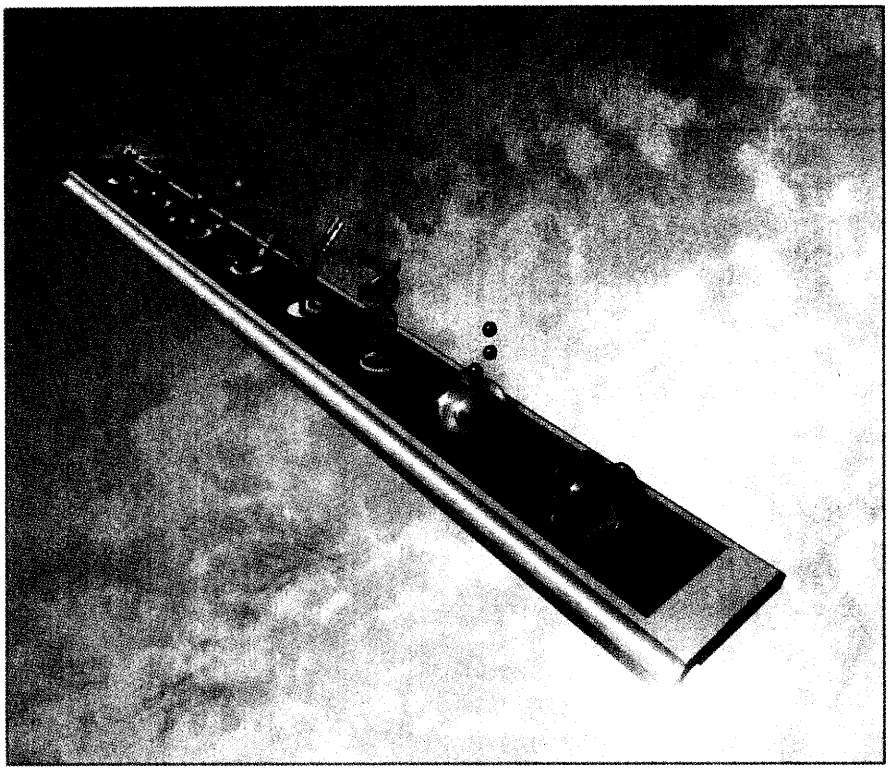

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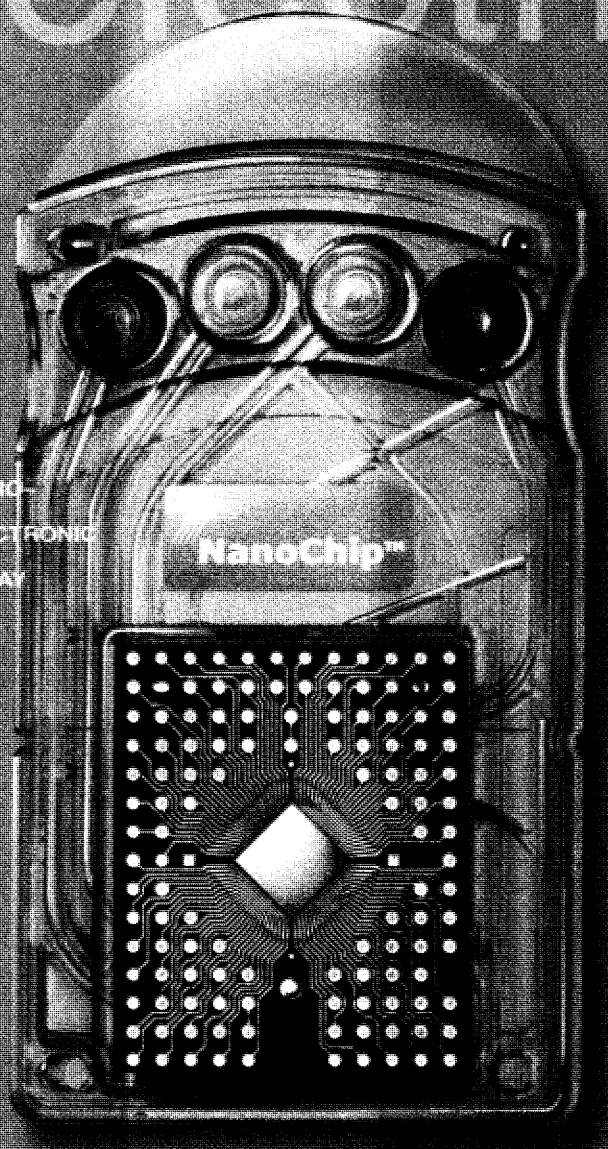

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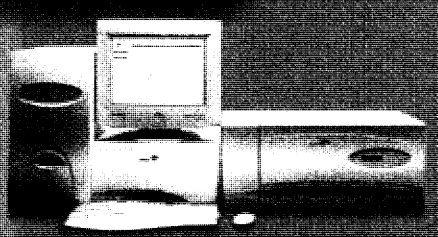

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says Amorese. "The probe sequences are converted into a design file for our *in situ* writer; then we can produce an array – as a single one or in the thousands – by synthesizing on a single base at a time at all locations on the array in parallel."

MWG-Biotech AG focuses on synthesizing oligos first and coupling them to the substrate surface afterward. "The main disadvantage of Affymetrix's on-chip synthesis is the limitation in the length of the oligos," says Donner. "We can purify the oligos and check them prior to spotting, which isn't possible with on-chip synthesis."

Different oligo makers provide the market with a choice among the lengths of oligos available for purchase. Some vendors regard the 20-mer length of Affymetrix's oligos as too limiting. "We use 50-mers," says Donner. Why? "It's a matter of production," he explains. "Our mass spectrometry can check oligos only up to 50-mers. And tests we have carried out suggest that 50-mers are highly specific, while oligos with more than 50 base pairs can lead to cross-hybridization."

QIAGEN Operon has a different take on the issue. "We have decided to use 70-mers and one oligo per gene," says Potgeter. "They are more selective. And scientists like to see the message coming from the tissue. The role of Operon is to support our customized chips with longer oligos." Agilent splits the difference. "We typically use 60-mer oligos rather than the shorter ones," says Amorese.

Whatever the selected length, it's clear that customers have increasingly opted for oligo arrays in recent months. "There's a move away from cDNAs to long oligos," says TIGR's Quakenbush. "I see an evolution toward these long oligos to ease sample handling. Complementary DNAs are hard to work with over a long period of time. Oligos are easy to maintain and reproduce. The challenge of using long oligos is that you rely on having a good working knowledge of what the genes are."

Millennium, which up to now has largely made and used its own cDNA arrays with nylon substrates, has recently started to take the oligo route. "We are substantially ramping up our use of Affymetrix microarrays," says Dionne. He cites three reasons for the change. "First," he says, "we think the Affymetrix platform has improved to the point at which it rivals our nylon platform. Second, the oligo base will have significant advantages in terms of giving us the ability to query certain parts of the genome that cDNAs can't query. And third, it gives us the opportunity to shift our resources downstream because we don't have to produce our own arrays."

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THE BASIC STEPS

Whatever the form of DNA, producing and conducting experiments with DNA chips requires several basic steps. "You can't just take a PCR product or genomic DNA, put it on a microarray and obtain a nice signal," says Michael Pirrung, professor of chemistry at **Duke University**. "Once the chip is in hand you have to have a sample preparation step." His group has developed its own method of preparation, referred to as optical scissors. "We use a photochemical approach," he explains. "The technique can make single-stranded products or directly make short fragments for the microarray. It's a research problem at this stage. We're making a number of modified nucleotides."

In general, any scientific group must prepare or purchase a slide or chip, synthesize or obtain the DNA, apply the DNA samples to the chip, conduct a hybridization experiment with a sample of interest, scan the chip, and analyze the data. Several suppliers have entered the DNA chip market recently, providing the tools needed to produce chips as well as ready-to-use chips for popular applications.

DNA is attached to a solid substrate, such as a silicon/ceramic wafer, glass microscope slide, or a nylon membrane. Some of the early work with glass microscope slides was complicated by the fact that glass slides required pretreatment with such chemicals as polylysine to prepare the surface for DNA attachment. Those slides had poor lot-to-lot consistency. However, it did not take long for suppliers to develop better performing products. **Corning, Inc.**, quickly introduced its CMT-GAPS aminosilanized slides. These offered lower background noise and better consistency. Corning has recently left the microarray business. However, other companies offering the latest in prepared slides for DNA chip production include Clontech, **Genpak** (a part of British company **Genetix Group PLC**), and **Schleicher & Schuell**.

Quakenbush at TIGR has successfully used super amine slides. "We are also getting away from harsh chemical treatments," he says. "I've been told that we make the best arrays that people have seen."

For genomic research, the entire genome of an organism is extracted from cells or tissue. Gene expression studies need either total RNA or mRNA for DNA synthesis. The purity of RNA is a critical factor in the hybridization step when labeling with fluorescent tags. Proteins or other contaminants can promote significant nonspecific binding to the slide's surface of fluorescent-labeled target DNA.

PREPARATION KITS

As in the case of many molecular biology techniques, suppliers have come to the aid of scientists by offering kits designed to simplify the preparation of DNA samples. Companies that

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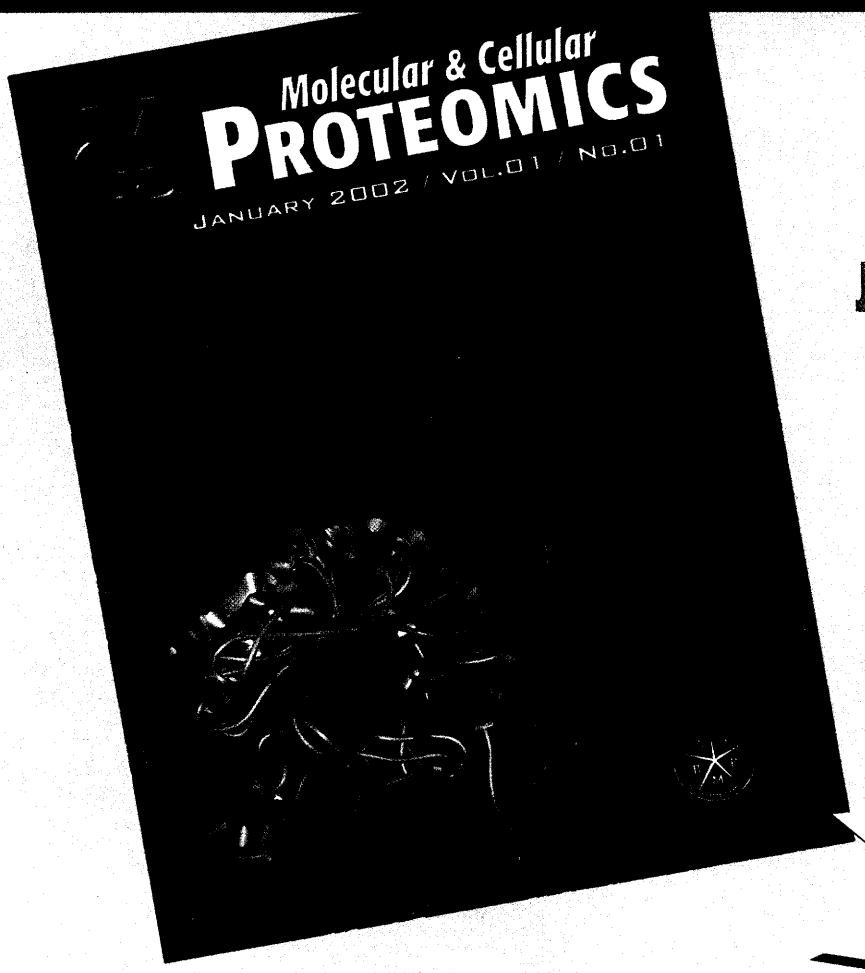

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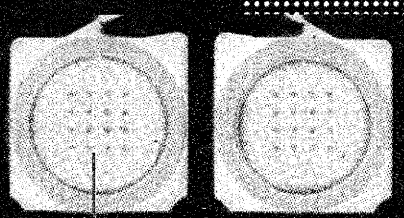

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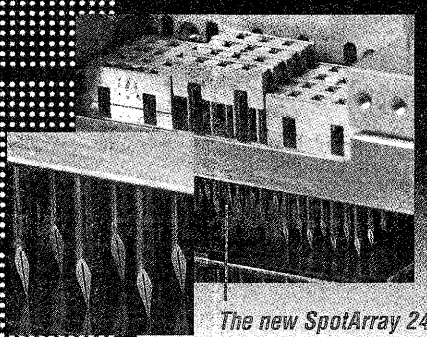

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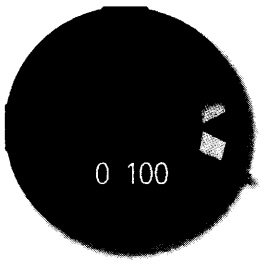

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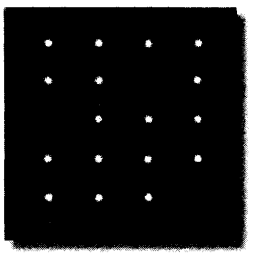

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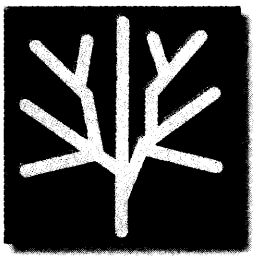

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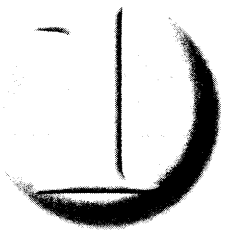

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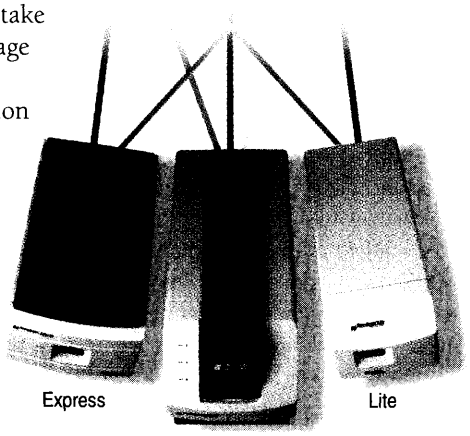

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produce reagents and kits for isolating and purifying DNA include **Brinkmann** (an **Eppendorf** company), Clontech, **Millipore**, and Promega. "We have three different RNA preparation kits for microarrays," says Mullinax of Stratagene. "We have a mini-, micro-, and nanokit. The difference is in the number of cells that the kit can deal with: 10^5 to10^7 for the mini, one to 10^5 for the micro, and one cell to 10^4 for the nanokit. We're recommending the micro- and nanokits for customers doing laser capture microscopy."

A few companies focus almost exclusively on providing tools for this segment of microarray manufacture. QIAGEN offers a broad range of reagents and kits for isolating and purifying DNA and RNA. "The better the preparation, the better the results," says Potgeter. "Your RNA has to be intact. Hence we have a program of RNA stabilization. One of our products is RNeasy Protect for tissues." In a recent collaboration with **BD Biosciences**, QIAGEN has developed a method of collecting blood and stabilizing it in a container. "We try to avoid any destruction of RNA – not just to get rid of shortened strands but also to avoid instability from RNA lying around for a long time," Potgeter continues.

Alternatively, scientists can buy oligonucleotides from companies such as MWG-Biotech, QIAGEN Operon, and **Sigma Genosys**. These suppliers provide custom oligonucleotide synthesis services. "We deliver catalog microarrays premanufactured," says MWG's Donner. "We also offer custom-made ones from lists of genes sent by customers; we then design the oligonucleotides and offer oligo sets based on our catalog arrays."

ONTO THE CHIP

Three basic techniques in common use couple the DNA samples to a chip. In addition to the Affymetrix method of photolithography, which several other vendors use under license, these are mechanical spotting and inkjet deposition. Mechanical spotting involves direct contact with the substrates, which can damage the surface. But until recently it has been able to spot more accurately than noncontact inkjets.

In mechanical spotting, a robotic liquid handling system picks up samples of DNA and deposits them onto the surface of a slide at predetermined locations. The pins used in this system, which can be split quills or solid rods, first come into contact with the DNA sample. Then they apply the sample to the slide by making contact with the slide surface. Washing the pins between applications ensures that any particular DNA sample is not cross-contaminated with another. Suppliers of robotic systems for microarray spotting include **BioRobotics Ltd.**, **Cartesian Technologies**, GeneMachines, **MiraiBio** (Hitachi Genetic Systems), and **Packard BioScience**. This type of spotting system is very popular in academic laboratories owing to its ease of use, low cost, and versatility.

Cartesian Technologies, recently acquired by **Genomic Solutions**, sells a range of systems for spotting microarrays. "We offer a number of systems ranging from the small benchtop MicroSys, an 11-slide machine for entry level microarraying, up to the PixSys for 50 slides and the 100-slide ProSys," says Don Rose, Cartesian's vice president of research and development. "We're coming out with a new machine, the MegaSys, that will handle about 250 slides and will include a vision system for quality control and automated plate handling." Both systems can be configured with mechanical pins or inkjets.

Inkjet technology was adapted from the personal computer printer industry. A DNA sample is loaded into a tiny nozzle equipped with a piezoelectric device. The device expels a precise amount of DNA from the nozzle onto the slide surface. The nozzle is washed after each deposition to provide a clean nozzle ready for the next sample.

Agilent uses inkjet printing technology developed by its corporate parent, **Hewlett-Packard**, to manufacture its DNA microarrays. "One thing I find most intriguing about inkjets is the precise volume you can dispense," says Amorese. "It has a profound effect on arrays that every drop fired from the head is essentially the same volume." Agilent uses inkjet heads in two array methods. "For *in situ* arrays we synthesize oligos in place, using heads that have a continuous feed," Amorese says. "We can also deposit a presynthesized material from inkjets whose heads are filled with very small amounts of material." Other companies that provide inkjet technology include BioRobotics and Packard BioScience.

LABELING, SCANNING, AND HANDLING DATA

Labeling for DNA microarray analysis generally involves fluorescence. Not only does this approach avoid the issues of safety and disposal associated with radioactive markers; it also permits researchers to multiplex samples, permitting them to read several experimental parameters simultaneously. "Fluorescent cyanine dyes are generally preferred for microarray labeling," says Burzcak of Amersham Biosciences. "Other fluorescent technologies are available, but they have a weakness in either linking to nucleic acids or the control of crystal size."

In multiplexing, each probe is labeled with a different fluor that can be simultaneously detected at different wavelengths with optical filters. An RNA sample is converted to labeled cDNA by reverse transcriptase PCR in the presence of fluorescently labeled nucleotide precursors. Genomic DNA is fluorescently labeled by nick translation or random primer techniques. To enable the direct comparison of two samples, scientists label them with different fluors, and then mix them together and hybridize them with a microarray. Agilent, Genpak and **Roche Molecular Biochemicals**, among other firms, also offer kits for labeling nucleic acid samples.

After hybridization, DNA chips are scanned using instruments specifically designed to detect fluorescent signals. Most manufacturers of imaging instruments use the same principle. A scanning fluorescence microscope illuminates each DNA feature or spot and measures the fluorescence of each fluor or dye separately. Scientists then use these measurements to determine the ratio or relative abundance of the sequence of each specific gene in the two mRNA or DNA samples.

"Right now there are two basic technologies for scanning," says Axon's Pickett. "One uses

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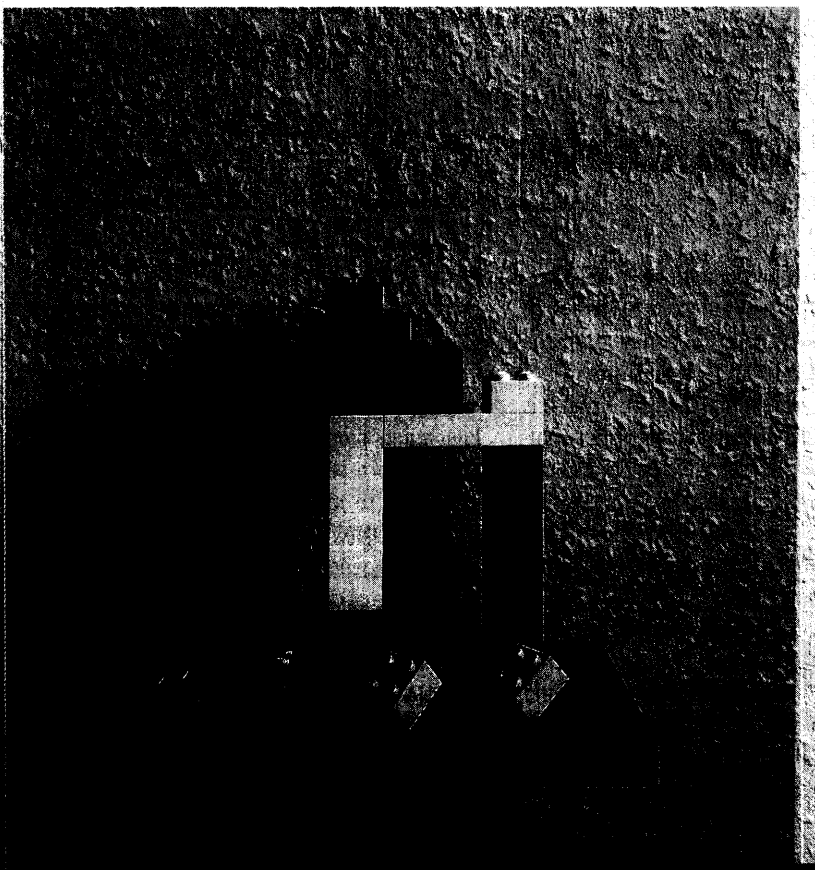

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laser excitation and photomultiplier tube detection. The other uses a white-white system with filters for excitation and a CCD array for image collection." Axon's 4000 B laser scanner is a two-color system. "Its primary benefit is that it is a high performance instrument that is integrated with our GenePix software," says Pickett. "Our customers find it to be easy to use."

QIAGEN's new ultrasensitive SensiChip Reader uses cutting edge planar waveguide technology for microarray analysis. "By coupling the laser light through a diffractive grating onto the waveguiding film of our SensiChip microarrays, we can create an evanescent field whose excitation capacity for fluorescent dyes is limited to 300-400 nanometers," says Potgeter. "The CCD camera detects only the layer with the capture probes and their specific fluorescent targets. This dramatically improves the signal-to-background ratio." Other companies with expertise in such imaging detection include Agilent, **GSI Lumonics**, Genomic Solutions, and Molecular Dynamics.

Making sense of the large amounts of data collected from gene sequencing and gene expression experiments is no simple task. Scientists who need to manage and analyze the results from DNA microarray work spend many hours working with computers and specialized software to store and manage sequence data, design microarray formats, and analyze the data gathered from their studies. They can obtain help, though, via software solutions developed by **BioDiscovery**, **GeneData AG**, **LION Bioscience AG**, **Scanalytics**, **Silicon Genetics**, and **Spotfire**, among other vendors.

Public databases allow researchers to share the results of their work through the Internet. Researchers can query the large number now available to seek similarities and other relationships between different sets of data. One useful and accurate source of such databases is www.gene-chips.com. This web site, maintained by Leming Shi of **BASF Corporation**, lists databases from the GATC, the **National Center for Biotechnology Information (NCBI)**, the **Stanford MicroArray Database**, and others. It is also an excellent reference tool for any individual interested in working with microarrays.

FROM GENE EXPRESSION TO SNPS

Understanding how cells function and respond to changes in their environment has intrigued scientists for centuries. DNA microarrays permit researchers to examine cell differentiation, cellular aging, programmed cell death, and various disease processes in greater depth than was possible prior to its emergence in the laboratory. "We use DNA microarrays to understand the changes of gene expression in cells as a function of some drug candidates that my laboratory is working on," says Duke's Pirrung.

Pharmaceutical companies embraced the use of DNA microarrays when they first became available because of their potential for improving the drug discovery process. Their scientists wanted to identify the genes involved in disease processes and to monitor responses to drug candidates. DNA microarrays offered them a new high throughput method for simultaneously evaluating large numbers of genes and monitoring physiological responses to potential drugs. Specifically, DNA microarrays can help researchers to find new drug targets – the molecules with which specific drugs interact – by identifying those genes whose expression levels are altered in a diseased state.

A more recent application for DNA chips occurs in the study of the natural DNA variations among individuals called single nucleotide polymorphisms (SNPs). A SNP is characterized by a single DNA base pair substitution at a specific location in a gene. For example, some individuals in a population may have the base "A" while others may have the base "C" at the same location. Taken together, many of these SNPs can be examined in an individual to develop a type of genetic fingerprint. Scientists can quickly examine the differences using a DNA microarray designed specifically for SNP analysis. This work has value because SNPs can provide information on an individual's predisposition to a given disease. They can even predict how a patient will respond to a particular class of drugs.

STRATEGY FOR SNPS

PolyGenyx, Inc., has developed a unique strategy for SNP analysis. Current technology fixes many thousands of SNPs to a single surface, with each at a separate, defined position on the microarray. This approach has a significant disadvantage: A separate microarray or chip must be used to genotype every single individual. "One of the problems in doing a genome-wide SNP study is how large these studies get relatively quickly," says John Landers, chief scientific officer of PolyGenyx. Thus, a 5,000-individual study would involve 5,000 SNP chips, costing nearly $5 million, for the hybridization detection step alone.

Rather than fixing the SNPs, PolyGenyx's proprietary OmniScan method fixes the genomes of multiple individuals to microarrays. "Through a single PCR reaction we can amplify a random reproducible set of the whole genome," Landers explains. Thus, the SNP detection step now involves hybridizing SNPs, rather than genomes, to the solid surface. This enables genomic DNA from over 10,000 individuals to be arrayed onto a single surface and genotyped simultaneously. This parallel processing approach is substantially more efficient than serial processing for larger population studies.

PolyGenyx is also developing proprietary technologies to enable simultaneous hybridization of multiple SNPs to a single microarrayed surface that will improve efficiency even further. In Landers's view, the method has potential uses in DNA fingerprinting. It could handle the huge backlog at the FBI and other crime labs," he says. "We've also had people ask us about the method's use in foods. It could answer such questions as 'Where does your caviar really come from?' and 'Do your coffee beans come from Colombia?'"

Dionne of Millennium sums up the promise of DNA microarrays and chips. "We think that the real future of microarrays will involve utilizing data better," he says. "That's clearly in the type of experiments done and the analysis and associating not only gene expression but also pathway expression types of data. That's where a lot of our focus is going to be."

Peter Gwynne is a freelance science writer based on Cape Cod, Massachusetts, U.S.A. Gary Heebner is a marketing consultant serving the scientific industry, based in Foristell, Missouri, U.S.A.

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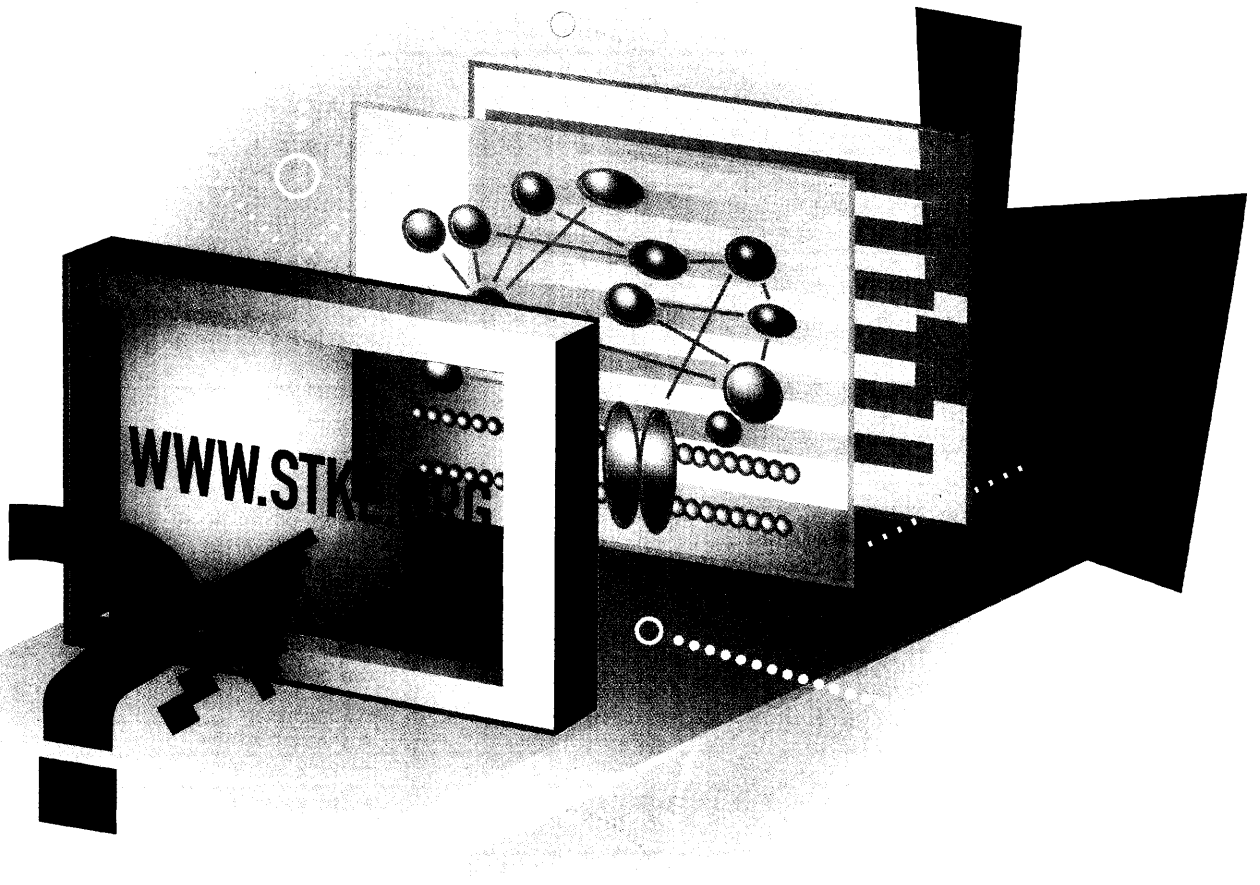

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All application materials should be sent to: **Carleton J. Phillips, Chair, Department of Biological Sciences, Texas Tech University, Lubbock, TX 79409-3131** by 15 February 2002. Visit the Biological Sciences **website: http://www.biol.ttu.edu** for further information. *Women and members of underrepresented groups are encouraged to apply.*

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The web site for the Department of Genetics is **lifesci.rutgers.edu/~genetics**. Applicants should email a CV, a statement of research interests, and addresses of three references to **jhey@mbcl.rutgers.edu**, or mail that information to: **Dr. Jody Hey, Rutgers University, Nelson Biological Laboratories, 604 Allison Rd., Piscataway, NJ 08854-8082**. Application review begins March 1, 2002 and ends when appointments are made. Starting dates are flexible.

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As a member of a dynamic team, you will participate in drug discovery projects while contributing to new model development for *in vivo* pharmacology. Specific duties include evaluating potential drug candidates in xenograft and syngenic tumor models; performing pharmacokinetic and MTD studies; generating and analyzing data; and identifying and evaluating new tumor models and methods of analysis. Close interaction with other members of the Oncology Department, as well as members of DMPK, Pathology, Toxicology and the Galenics groups, will be involved. Requirements include a BS or MS in Biology or related field, with at least 2 years using *in vivo* tumor models. Familiarity with handling mice and rats; and experience dosing animals by IV, SC, IP routes and oral gavage are necessary. Knowledge of surgical techniques in rodents is desirable. High-caliber analytical and technical skills, as well as strong organizational, communication, computer and teamwork skills, are required. Please refer to **Position Code PC100FM** on resume.

Sr. Scientist

You will participate in the development, identification and validation of biomarkers for Oncology drug discovery projects, including pharmacodynamic and surrogate markers using *in vitro* and *in vivo* methods. Specific duties include evaluating the role of various target-specific molecules, as well as downstream molecules of the relevant biological pathways in tumor cells, host cells and biological samples and their modulation by potential drug candidates. Interaction with scientists in Cell Biology, *In Vivo* Biology, Pathology and Genomics will be involved. To qualify, you will need a BS with 3 years of experience (or MS with 2 years of experience) in biology or related field, with specific expertise in utilization of *in vivo* biomarkers in Oncology models. A background in either biochemistry or molecular biology is highly desirable, as is familiarity with handling mice and rats, dosing animals by IV, SC, IP routes and oral gavage. High-caliber analytical and technical skills, as well as organizational, communication, computer and teamwork skills, are important. Please refer to **Position Code PC130FM** on resume.

Principal Scientist

In this position, you will guide drug discovery projects in Oncology, with particular emphasis on in vivo biology. You will be responsible for the evaluation of potential drug candidates in xenograft and syngenic tumor models; utilize existing models and identify and evaluate novel animal models to assess anti-cancer compounds; and participate in the characterization of existing tumor models on a molecular and biochemical level. You will be responsible for the generation, analysis and presentation of data. You will have a supervisory role in the in vivo group. You will interact with a multidisciplinary team in drug discovery, including members of Drug Metabolism & Pharmacokinetics, Formulations and Pathology/Toxicology. A Ph.D. in Cancer Biology or Pharmacology with 2 years of experience in rodent animal models of cancer with drug discovery experience preferred. Familiarity with handling mice and rats, dosing animals by IV, SC, IP routes and oral gavage is necessary. Expertise in the field of angiogenesis is desirable, as is a background in molecular biology and pathology. High-caliber analytical and technical skills, as well as strong interpersonal, communication and computer skills, are required. Please refer to **Position Code PC203FM** on resume.

Senior Principal Scientist – Obesity

Must have the ability to work well with other scientists as well as independently. Will plan and design experiments, and interpret experimental results. Characterize enzyme/receptor antagonists or agonists in in vitro and in cell based assays. Will generate recombinant mammalian cell lines expressing enzymes/receptors, and develop cell based assays to monitor receptor/enzyme activity. Qualified applicant will possess a B.S. or M.S. in Molecular/Cellular Biology or Biochemistry with several years experience. Experience with various techniques in molecular/cellular biology including eukaryotic and prokaryotic expression, various immunological techniques, receptor characterization, enzyme characterization, cell based assays, signal transduction studies, and characterization of various antagonists or agonists required. Please refer to **Position Code PC299FM** on resume.

Hoffmann-La Roche, Inc., offers competitive salaries and an outstanding benefits package. For consideration, please send your resume with salary requirements to: **Hoffmann-La Roche, PR&D, HR Dept., 340 Kingsland Avenue, Nutley, NJ 07110; fax: 973-235-2767.** You must include the Job Code. Hoffmann-La Roche is an equal opportunity employer, fully committed to workplace diversity.

For more information visit our U.S. website at:
www.RocheUSA.com/careers

Roche

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Dean, College of Agricultural, Consumer and Environmental Sciences

The University of Illinois at Urbana-Champaign invites nominations and applications for the position of Dean of the College of Agricultural, Consumer and Environmental Sciences.

The Dean is the chief executive officer of the College, responsible to the Provost and to the Chancellor for its administration, and is the agent of the College faculty for the execution of College policy.

Qualifications sought include an earned doctoral degree; academic experience in the agricultural, consumer, or environmental sciences, or another field related to the College's scope; scholarly achievement; administrative experience; demonstrated commitment to the development of a talented, diverse faculty and staff; and ability to lead the College in its academic responsibility as part of a nationally and internationally recognized land-grant university. The Dean provides leadership in the College's service to a major agricultural and industrial state, works closely with campus and university administration as an integral part of intercollegiate and university-wide initiatives, and interacts with leaders at local, state, and national levels.

This is a full-time, 12-month appointment. Salary is negotiable. The expected starting date is August 21, 2002, with possible appointment earlier or later. To assure full consideration, nominations and applications (including vita) should be postmarked by February 1, 2002, and sent to:

Dr. Bradford Schwartz, Chair
Search Committee for Dean of the College of Agricultural, Consumer and Environmental Sciences
University of Illinois at Urbana-Champaign
Swanlund Administration Building
601 East John Street
Champaign, IL 61820
Attention: Shirley Apperson
(Phone 217 / 244-9483; Fax 217 / 244-5639)

Affirmative Action/Equal Opportunity Employer

Structural Biology Computational Specialist

Howard Hughes Medical Institute, a leading biomedical research organization, is seeking a Structural Biology Computational Specialist at our facility at **Yale University**.

Our facility research interests include many aspects of modern biology ranging from: DNA replication, protein/RNA folding, amyloid formation, X-ray crystallography, and computer modeling. You will provide computational assistance to our staff on various aspects of our research. Our ideal candidate has a background in computer modeling, graphics, and X-ray crystallography with an advanced degree. In addition to your primary duties, you may wish to continue your own limited computationally-related scientific research.

Please visit: **www.csb.yale.edu** for faculty research activities and a detailed position description.

HHMI offers an excellent salary and benefits package. Please send a C.V., along with a cover letter and references, to: **HHMI, Yale University, Department of Molecular Biophysics and Biochemistry, Center for Structural Biology, Attn: Dr. Jimin Wang, 226 Whitney Ave., P.O. Box 208114, New Haven, CT 06520-8114.** HHMI is an equal opportunity employer.

www.hhmi.org

HHMI
HOWARD HUGHES MEDICAL INSTITUTE

THE HELLENIC PASTEUR INSTITUTE INVITES APPLICATIONS FOR THE POSITION OF THE:

GENERAL DIRECTOR

Applicants can be of either Greek or French nationality.

Candidates are required to have the qualifications of a tenured Professor and have experience compatible with the scientific virtues and activities of the Hellenic pasteur Institute, which are as follows:

1. Public Health.
2. Research in Human and Animal Biochemistry, Molecular Biology, Microbiology and Immunology.
3. Training of Scientists in related areas.
4. Production of vaccines and biological or therapeutic substances.

Contracts are of three years duration on a full-time basis, renewable at the end of the three years.

Applicants should forward their resume to the:

Hellenic Pasteur Institute, 127 Vas. Sofias Ave., GR - 115 21 Athens, Greece, Tel. +301-6478851, +301-6478853.

Closing date: 31 January 2002.

Be a part of it.

Work and train beside some of today's most respected scientists at the Oklahoma Medical Research Foundation – and be a part of something important.

Biomedical research continues to be at the forefront of human ingenuity and scientific exploration. At OMRF, we've made leadership in these areas a tradition for over fifty years.

Located in the heart of the Oklahoma Health Center – a mecca of medical and research-oriented institutions – OMRF is home to world-renown scientists and numerous biomedical accomplishments. Research at OMRF focuses on the basic science of human disease: immunology, biochemistry, and molecular/cellular biology. And in the past decade alone, our scientists have been responsible for major breakthroughs in cardiovascular disease, Alzheimer's disease, and lupus.

A place to call home.

Consistently recognized for its commitment to the things that make life worth living, Oklahoma City is home to more than you'd think. Arts, entertainment, and countless activities round out a diverse mix of culture and people, making Oklahoma City – and the state of Oklahoma – a worthy destination for those who truly want more out of life.

It's only the beginning.

The Oklahoma Medical Research Foundation is accepting applicants for both graduate and post-graduate doctoral fellowship training programs, as well as independent investigators/members. Be a part of it. Find out more by visiting **www.omrf.org,** or call **1-800-522-0211** today.

Arthritis and Immunology

The Arthritis and Immunology Program is seeking two gifted postdoctoral candidates to understand the role of immunogenetics and autoantibody pathogenesis in systemic rheumatic disease. These current research projects aim to understand initiating and perpetuating factors in specific autoantibody systems and to identify underlying genetic defects that predispose to these diseases. Experience in cellular and clinical immunology, as well as molecular biology and biochemistry, are desirable. Applicants must have a Ph.D. and/or M.D. Please send curriculum vitae, summary of research interests and three references to: **Judith A. James, M.D., Ph.D., Arthritis and Immunology Program, Oklahoma Medical Research Foundation. FAX: 405-271-4110; E-mail: jamesj@omrf.ouhsc.edu.**

Cardiovascular Biology

A postdoctoral position is available in Cardiovascular Biology studying the structure and function of the coagulation proteins. Using X-ray crystallography, our work deals with the allosteric role of cofactors upon enzymatic activity. Candidates should have a strong background in either biochemistry or crystallography, and ample opportunities exist for training in each area. We are part of a well-funded and highly congenial department with many collaborations and several projects immediately available. All data collection and computational facilities are available and we are members of a synchrotron consortium with regular beamline access. For more information, contact **Tim Mather, Ph.D., Cardiovascular Biology Program, Oklahoma Medical Research Foundation. E-mail: tim-mather@omrf.ouhsc.edu.**

Molecular Immunogenetics

A postdoctoral position is available in the Molecular Immunogenetics Program to study the molecular mechanisms of somatic mutation and genetic recombination of human antibody genes. The current research is aimed at the identification of novel gene products present in human B lymphocytes responsible for the generation of antibody diversity and the relationship of these processes to specific diseases. Experience in molecular biology, molecular immunology and biochemistry are desirable. Applicants must have a Ph.D. and/or M.D. Send curriculum vitae, summary of research interests and three references to: **J. Donald Capra, M.D., Molecular Immunogenetics Program, Oklahoma Medical Research Foundation. FAX: 405-271-8237; E-mail: JDonald-Capra@omrf.ouhsc.edu.**

Arthritis and Immunology

A postdoctoral position is available in the area of cytokine signaling. Our lab is currently focused on delineation of second messenger kinase-mediated signaling defects that lead to human autoinflammatory disease. Current investigations are performed on transfected cell culture-based models of human myeloid cells (specifically neutrophils and monocytic cells) and isolated human peripheral blood leukocytes. Future investigations will include transgenic mouse models. Our laboratory works in concert with the OMRF microarray research facility, which provides access to state-of-the-art genomics and proteomics tools for ongoing studies. Applicants with prior experience in second messenger immunobiology are encouraged to apply. Please send a CV, statement of research experience and future interests, and three references to **Dr. Michael Centola (Ph. D.), Arthritis and Immunology Program, Oklahoma Medical Research Foundation. FAX: 405-271-4110; E-mail: centolam@omrf.ouhsc.edu.**

OMRF

The Oklahoma Medical Research Foundation

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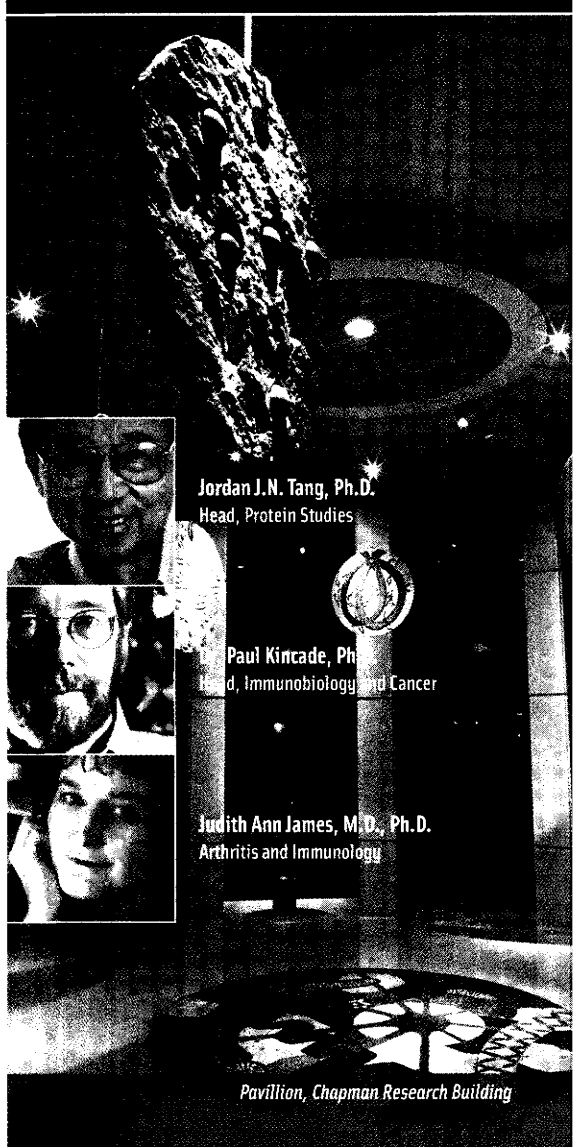
"...that more may live longer, healthier lives"

OMRF

Oklahoma Medical Research Foundation



Pavillion, Chapman Research Building

OMRF is accepting applicants for both graduate and post-doctoral fellowship training programs.

Find out more by visiting www.omrf.org, or call **1-800-522-0211** today.

FACULTY POSITIONS IN GENOMICS

The **Department of Veterinary PathoBiology, University of Minnesota**, invites applications for full-time tenure-track or tenured faculty positions in genomics at the level of Assistant or Associate Professor. The selected candidates will join a Departmental program with demonstrated leadership in molecular biology, microbial and animal genome analysis, and will receive competitive salaries and start-up packages. Rank (Assistant or Associate Professor) and term will depend on qualifications and experience consistent with Collegiate and University policy. They will become part of an expanding University commitment to cutting-edge research in microbial, biomedical and agricultural genomics, and bioinformatics, and they will have access to new facilities for high throughput screening, DNA sequencing, proteomics, microscopy and imaging. Additional position information is available at **http://www.cvm.umn.edu/departments/vpb.htm**.

Microbial Genomics *(one position)* - We seek candidates who wish to pursue genetic and genomic approaches to microbial pathogenesis and/or host-pathogen interaction for diseases of relevance to veterinary medicine or comparative medicine.

Animal Genomics *(one position)* - We seek candidates who will utilize molecular, structural, functional or comparative genomics approaches to address the cellular and molecular basis of animal health and disease, animal models of human disease, or topics in animal production.

Candidates must have a Ph.D. or foreign equivalent in a relevant field of biomedical, biological or agricultural sciences, and two or more years of postdoctoral experience. Demonstrated ability to publish in peer-reviewed journals, obtain extramural research support, and teaching experience are desired. Successful applicants are expected to develop externally funded research programs in an area of microbial or animal genomics, participate in graduate and professional student teaching programs, and train pre- and post-doctoral scientists. Start dates are August 1, 2002, or when a suitable candidate is identified.

Applicants must provide an introductory letter specifying the position sought, curriculum vitae, a statement of research and teaching goals, and should arrange to have three letters of reference sent to the Search Coordinator. Letters of reference should include assessment of the applicant's background and abilities in research and interpersonal skills. Send materials to: **Mr. Doug Johnson, Genomics Search Coordinator, Department of Veterinary PathoBiology, University of Minnesota, 205 Veterinary Science, 1971 Commonwealth Avenue, St. Paul, MN 55108: Fax (612) 625-5203; email johns231@umn.edu** (for inquiries only). Reviews of applications will begin March 1, 2002 and continue until the positions are filled.

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

College of Veterinary Medicine

UNIVERSITY OF MINNESOTA

GLOBAL OPPORTUNITIES

Ewha Womans University
Faculty Positions in the Area of Cancer, Vascular Disease, Immune Disorders, and Cell Signaling

The Division of Molecular Life Sciences and the Department of Biology jointly invite applications for three faculty positions at the Assistant or Associate Professor level. We seek highly interactive individuals with expertise in epithelial cell, endothelial cell, or T lymphocyte. Experience in cell signaling mechanism is not required, but the successful candidates will be expected to develop very close collaborative programs with Ewha's strong research team of cell signaling and proteomics in the area of cancer, vascular disease, and immune disorders. Applications from outstanding candidates within all areas of broadly defined cell signaling research will be also given serious consideration.

The Ewha Division of Molecular Life Sciences (web site address : **http://home.ewha.ac.kr/~ebk02/**) with 18 active faculty members is supported by the Brain Korea 21 Initiative ($0.5million/yr), the KOSEF Center of Excellence Grant ($1.0 million/yr), and the collaboration grant from SK Corporation ($1.5 million/yr), and has the core facilities for DNA sequencing, Confocal Laser Scanning Microscopy, MALDI-TOF MS, FACS. A new research building with transgenic and mouse knock-out facility is expected to be completed for the Cell Signaling Research Group by the summer of 2003. The incumbent will be provided with ample laboratory space and generous start-up funds ($80,000), and will have a light (3-5 hr per week) teaching responsibility.

To apply, please submit a cv and a brief statement of current and future research interests (2-3 pages) to **Search Committee (Fax: 82-2-3277-3760; e-mail: ebk02@mm.ewha.ac.kr)** by January 20, 2002. Selected candidates will be asked later to arrange to have three letters of recommendation sent to the search committee and to make a paid trip to Ewha early February for a seminar presentation.

UNIVERSITÉ DE GENÈVE

Frontiers in **Genetics**

UNIVERSITY OF GENEVA
Switzerland
Department of zoology and animal biology
National Centre for Competence in Research
'Frontiers in Genetics'

INDEPENDENT GROUP LEADER POSITION

RESEARCH POSITION available for a junior scientist in a tenure-track position to lead a small, independent research group in the area of molecular developmental genetics or genomics. The candidate is required to have a doctoral degree and postdoctoral experience, and is expected to seek outside funding for research and to participate in teaching. The successful candidate will have access to all departmental facilities and will receive some core support for running costs. The level of the appointment will depend on experience and qualifications.
Women are encouraged to apply. Candidates should send a curriculum vitae, including a list of publications, and the names of three referees to the Chairman of the department of zoology and animal biology (http://www.unige.ch/sciences/biologie/biani/index.html), 30 Quai Ernest-Ansermet, CH-1211 Geneva 4, Switzerland, before May 15th 2002.

SINGAPORE [illegible]GHEST POINT IS [illegible]4M. BUT THAT DI[illegible] STOP HIM FROM REACHING [illegible]PIN[illegible]CLE.

It was a struggle, to say the least. Especially when the pinnacle happens to be Mount Everest. Little wonder then that intrepid adventurer Khoo Swee Chiow considers it, quite literally, the highest point of his life.

Khoo and his team mate, Edwin Siew, made Singapore history on 25 May 1998 by flying the national flag at a dizzying 8,848m, in mind-numbing, blood-curdling 80kmh winds.

"The last stretch of the climb was extremely tough. We were in our own silent world. We could only hear our own breathing through the oxygen mask. Then we stepped onto the summit. Tears just rolled down my face. We had done it! Edwin and I embraced and smiled."

Singapore.
Your world of possibilities.

"I couldn't believe the reception when we got home. Everyone was there. Friends, family, well-wishers, ministers, my previous bosses from SIA. And even though Edwin and I are adopted sons, I felt every inch a Singaporean. Simply because Singapore believed in my dream and made it happen."

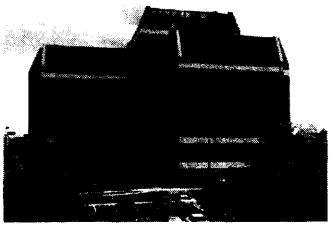
"I don't want to stop dreaming. I want to keep climbing. You may ask what's next after Everest. And I'll tell you, plenty. The highest point in Africa, the South Pole (Khoo led a successful expedition to the South Pole on 31 Dec 1999), the North Pole, sailing around the world...the list is endless."

Achievers like Khoo Swee Chiow appreciate an environment that has good grounding and yet allows them to soar. We'd like to think that Singapore is up to that challenge. If you're convinced you want to test your limits, why not make Singapore the next stop on your résumé.

Visit your nearest Contact Singapore office or log onto http://www.contactsingapore.org.sg today. We'll tell you everything you need to know to scale new heights.

Contact Singapore

BOSTON Tel: (1) 617-492-9843 Fax: (1) 617-492-9845 Email: boston@cs.org.sg CHICAGO Tel: (1) 312-222-0620 Fax: (1) 312-222-0630 Email: chicago@cs.org.sg
SAN FRANCISCO Tel: (1) 650-591-3828 Fax: (1) 650-591-1080 Email: sanfrancisco@cs.org.sg TORONTO Tel: (1) 416-223-8880 Fax: (1) 416-223-9694 Email: toronto@cs.org.sg
LONDON Tel: (44)(0) 20-7321-5600 Fax: (44)(0) 20-7321-5601 Email: london@cs.org.sg PERTH Tel: (61) 8-9321-5033 Fax: (61) 8-9321-4864 Email: perth@cs.org.sg
SYDNEY Tel: (61) 2-9262-9068 Fax: (61) 2-9262-9451 Email: sydney@cs.org.sg HONG KONG Tel: (852) 2527-8100 Fax: (852) 2527-8400 Email: hongkong@cs.org.sg
SHANGHAI Tel: (86) 21-6437-0776 Fax: (86) 21-6431-1349 Email: shanghai@cs.org.sg CHENNAI Tel: (91) 44-431-4642/3 Fax: (91) 44-431-4641 Email: chennai@cs.org.sg
SINGAPORE Tel: (65) 332-8497/8 Fax: (65) 334-5312 Email: singapore@cs.org.sg



Clinical Laboratory Directors in Bacteriology, Virology and Bioterrorism
Wadsworth Center
New York State Department of Health
Albany, New York

The Wadsworth Center, the New York State Public Health Laboratory, is seeking to fill three senior level positions for the Directors of the Clinical Bacteriology Laboratory, the Clinical Virology Laboratory and the Bioterrorism Response Laboratory. These are independent positions that are expected to maintain a close working relationship in order to effectively manage both disease outbreaks and bioterrorism threats.

Bacteriology Laboratory Director. The major responsibility of this position is the direction of the bacteriology diagnostic and reference laboratory. The Director will collaborate with the Department of Health's Division of Epidemiology to provide laboratory support for bacterial disease outbreaks, participate in a CDC-sponsored Emerging Infections Program and oversee the statewide Bacteriology Proficiency Testing Program. The position entails responsibility for the administrative functions associated with these duties. Candidates must have a doctoral degree and a minimum of four years postdoctoral experience in a clinical microbiology laboratory with an emphasis on bacteriology. Board certification (ABMM) in medical microbiology (ASM) is encouraged but not required.

Virology Laboratory Director. This position will manage the virology diagnostic, reference, and encephalitis laboratories, which currently maintain diagnostic capacity for a wide range of viral agents of importance to public health. Responsibilities will include development of biosafety and surveillance programs for managing routine clinical specimens that may contain newly emerging or introduced viral pathogens. The Director will also oversee the statewide Virology Proficiency Testing Program. The position requires a doctoral degree and at least four years experience in diagnostic clinical virology. The preferred candidate will have experience at a leadership level in a clinical virology program encompassing both classical methods for identification of viruses as well as the development and validation of nucleic acid-based technologies such as real-time PCR and multiplex analyses. A background of laboratory management skills, including the training and direction of professional and technical staff, is a major priority.

Bioterrorism Response Laboratory Director. This newly established position will expand the Wadsworth Center's pre-existing rapid response programs to counter bioterrorism and manage emerging disease outbreaks affecting New York State. The director will oversee a group of scientists who are trained in molecular microbiology and have actual prior experience in handling bioterrorism events. Primary responsibilities will include the development, validation, and implementation of cutting-edge methods for the detection and surveillance of bioterrorism agents in clinical and environmental samples. There also will be an organizational requirement to set up high volume sample accessioning, tracking and data entry procedures. The position requires a doctoral degree and at least four years experience in an appropriate scientific area. A background in BSL-3 procedures, staff training, and handling of dangerous pathogens is preferred.

Excellent communication skills are necessary since all three positions involve multiple interactions with physicians and public health professionals at the federal, state, and county levels. Pursuit of research programs is encouraged, and there are ample opportunities for collaborative efforts with senior service and research professional staff. Salary will be commensurate with training and experience.

The Wadsworth Center is a unique biomedical and environmental research institution with more than 200 scientists and 800 support staff housed in modern, well-equipped facilities. The three laboratories will be part of the Division of Infectious Disease, which includes diagnostic immunology, mycobacteriology, mycology, parasitology, virus isolation, viral genotyping, HIV serology, arbovirology, rabies and tick-borne disease laboratories. Basic and applied research laboratories in many disciplines define an outstanding scientific environment, while centralized core facilities in biochemistry, immunology, molecular genetics, and computational biology provide state-of-the-art instrumentation and support services. Additional information about the Wadsworth Center can be found at **http://www.wadsworth.org.**

New York State's Capital District presents a high quality of living, with numerous cultural and recreational opportunities. The city of Albany has beautiful natural surroundings, and the major metropolitan areas of the Northeast are within easy reach.

For information regarding additional positions available, visit the NYS Department of Health website **www.health.state.ny.us** Applicants should submit a *curriculum vitae*, names and addresses of three referees, and a brief description of their laboratory experience to:

Dr. Jill Taylor or Dr. David Anders, Search Committee Co-Chair, Wadsworth Center, New York State, Department of Health, P.O. Box 22002, Albany, NY 12201-2002.

The Wadsworth Center is an Affirmative Action/Equal Opportunity Employer.
Women and Minorities are encouraged to apply.

UNIVERSITY OF CALGARY

Creating the future of health.

The Neurosciences Research Group invites applications from outstanding investigators for full-time academic positions at the Assistant Professor level or higher. While duties also include teaching and graduate student supervision, 75% of time will be protected for research. The candidate will join a research community with interests in neuroscience (www.ucalgary.ca/~neuro) in the rapidly growing Faculty of Medicine, which will soon build a major new research facility.

- **Molecular Neurobiologist** – We are seeking a candidate with interests in ligand-gated receptors, G-protein coupled receptors, and/or synaptic signalling and who also uses innovative approaches to investigate synaptic processes and can interact with other members of the neuroscience research community. Additional start-up funding will be provided through the Novartis Chair in Schizophrenia Research.
- **Visual Neuroscientist** – An outstanding scientist with expertise in molecular or cellular neurobiology, genetics, electrophysiology, imaging or related fields is needed to join a group of vision scientists. The candidate must use innovative approaches to answer fundamental questions concerning retinal function in health and disease.

Qualifications include a PhD, MD or equivalent, appropriate postdoctoral training, and an established record of publications and demonstrated expertise in this area. Salary support and start-up funds are available through successful application to the Alberta Heritage Foundation for Medical Research, the Canadian Institutes of Health Research, and/or other external sources.

Calgary is a vibrant, multicultural city (pop. ~1,000,000) located close to Banff National Park and the Rocky Mountains.

We seek applications from all interested persons. Please submit a curriculum vitae and a statement of research interests, and arrange to have three letters of reference sent directly, by **February 4, 2002**, to: **Dr. Brian A. MacVicar**, Chair, Neuroscience Research Group, Faculty of Medicine, 3330 Hospital Drive N.W., Calgary, Alberta, Canada T2N 4N1 E-mail: macvicar@ucalgary.ca

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Calgary respects, appreciates and encourages diversity.

www.ucalgary.ca

RESEARCH FELLOWSHIP OPPORTUNITIES IN JAPAN

Sponsored by: the Commission of the European Communities, Brussels and the Japan Society for the Promotion of Science (JSPS).

If you are a national of a Member State of the European Union or a country associated with it for research purposes[1] and have completed your doctorate degree in natural sciences, engineering, social sciences or have acquired equivalent professional experience:

Why not consider the opportunity to carry out Research in a Japanese laboratory?

Several fellowship programmes exist for this purpose. The Commission of the European Communities is presently inviting applications for:

- **Its own EU S&T Fellowship Programme to Japan**
- **The JSPS Fellowship Programme to Japan**

The latter is a Japanese programme for which the Commission can nominate candidates.

These programmes, as do other at national level, offer the chance to experience a stimulating and challenging scientific environment and a profoundly different culture. Numerous young scientists from Europe, the US and other parts of the world are including a long-term stay in Japan in their career planning.

For more information contact:
European Commission, Mrs Joëlle Lardot, Office: SDME 01/30, B-1049 Brussels.
Tel.: 32 2 295 39 90 or 295 23 85. Fax: 32 2 296 05 60. Internet site:

http://www.cordis.lu/inco2/calls/1999907.htm

[1] Associated countries are: Bulgaria, Malta, Republic of Cyprus, Czech Republic, Estonia, Hungary, Iceland, Israel, Latvia, Liechtenstein, Lithuania, Norway, Poland, Romania, Slovakia, Slovenia.

ENVIRONMENTAL TOXICOLOGY FACULTY
The University of Mississippi

The Research Institute of Pharmaceutical Sciences, Environmental Community Health Research, Environmental Toxicology Research program invites application for a full-time, non-tenure track Research Assistant Professor with major interests in aquatic toxicology or a related area. Expertise in population-level genetic, inorganic or metals, or reproductive toxicology is of particular interest. The appointment requires the Ph.D. in toxicology or a related discipline and demonstrated excellence in research. Candidates will be expected to develop independent extramurally funded research programs using empirical approaches to study tissue or whole animal responses to environmental contaminant exposure. The successful applicant will be able to integrate his/her research with the existing program and will have opportunities for collaborative research with other departments including biology, pharmacology, and the National Center for Natural Products Research. Please submit applications including curriculum vitae, reprints of up to five recent submitted or published papers, summary of experience and past research, plan for future research, and names and postal and e-mail addresses of four references by February 1, 2002. Applications will be accepted until the position is filled or until an adequate applicant pool is reached. Send applications to: **Administrative Manager, The University of Mississippi School of Pharmacy, P.O. Box 1848, Room 1026 Thad Cochran Research Center, University, Mississippi 38677-1848.** Websites: **http://www.olemiss.edu and http://www.olemiss.edu/depts/pharmacology/etrp/index.html**. Materials may be submitted electronically by e-mail to **busofce@olemiss.edu**.

The University of Mississippi is an EEO/ AA/ Title IX/ Section 504/ ADA/ ADEA Employer

The Future is our Mission

Forschungszentrum Jülich

This is the guiding principle for the 4 200 staff members working at Germany's largest interdisciplinary research centre in the fields of "matter", "energy", "information", "life" and "environment". Our goal is top-class research in international competition with high-calibre personnel - women as well as men.

Most of our leading positions are occupied by men. This must change! For this purpose we have established our

Tenure Track Programme
for Women Scientists

according to the American model. The aim is to prepare highly qualified young women scientists for leading positions in the science sector.

Are you an outstandingly qualified, highly motivated and committed young woman scientist with a PhD in a scientific or technical subject and about three years' research experience? Would you like to qualify for a position as a professor or head of an institute without giving up the idea of having a family? Are you attracted by the idea of shaping the future within the framework of our interdisciplinary research and development programme? Are you able to work in a team, do you enjoy making contacts, can you guide employees, including young scientists?

This is your chance!

We offer you family-oriented working conditions, an excellent infrastructure with state-of-the-art equipment and an appropriate salary conforming to the Federal Collective Agreement for Public Employees (BAT). In the **Orientation Phase** (integration into the institute's research programme and development of your individual work profile) you will be offered a two-year fixed term contract. Long-term planning perspectives at an early stage are particularly important for women enabling them to combine career and family. At the beginning of the subsequent **Qualification Phase** (expanding and consolidating research and leadership experience) you will therefore already receive a **permanent contract**.

Deadline for applications: **February 28, 2002.**

You will find detailed information in the Guidelines for Applicants available from: Equal Opportunities Bureau, tel. ++49 24 61 61 20 05; fax ++49 24 61 61 80 40 E-mail: chancengleichheit@fz-juelich.de; Internet: http://www.fz-juelich.de

Equal opportunities are an integral part of our personnel policy. Therefore we received the „TOTAL E-QUALITY" award.

University of Zürich, Switzerland

Faculty of Medicine
Faculty of Economics, Business Administration and Information Technology
invite applications for the position of

Professor for Medical Informatics

Successful candidates will be able to cover the field of Medical Informatics in research and teaching. Teaching obligations include the training of students of the medical as well as of some other faculties and also of physicians in residency, fellowship and continuous education programs as well as for some non-academic medical staff.

Research should focus on areas of Medical Informatics which relate closely to current and future clinical requirements. The office of the professorship will be located at the University Hospital of Zürich. Close collaboration with the Department of Information Technology (**http://www.ifi.unizh.ch**) is expected.

Written applications should be submitted by **February 15, 2002** to the office of the Dean, Faculty of Medicine, University of Zürich, "Applications", Gloriastrasse 18, CH-8091 Zürich. For further information please contact the Chairman of the Search Committee, Prof. Dr. med. Urs Lütolf, Department of Radiology, Rämistrasse 100, CH-8091 Zürich (+41-1-255 29 30)

Applicants should consult the "Guidelines for the submission of applications", available at **http://www.med.unizh.ch/dekanat/richtform.html** or through the office of the Dean (Fax: +41-1-634 1079).

MOUNT SINAI SCHOOL OF MEDICINE

Postdoctoral Associates in Proteomics

The Mount Sinai School of Medicine has immediate openings for two Postdoctoral Associates in the Mass Spectrometry Proteomics research group in the department of Human Genetics. Ph.D. in either Molecular Biology, Cell Biology or Chromatography and mass spectrometry is required. Experience in protein chemistry and computer programming is desired. Successful candidates will involve in proteomic studies of cancer and neuro degenerative diseases. You will work in a collaborative environment and have opportunity to learn all of the proteomics and bioinformatics technologies.

Applicants should send a letter of interest, resume and a list of references (including telephone numbers and e-mail addresses) to: **Dr. Rong Wang, Box 1498, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029. E-mail: rong.wang@mssm.edu. Fax: 212-404-3898.** EOE.

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It's who we are.

Employment opportunities in PA

Merck & Co., Inc. is a leading research-driven pharmaceutical products company. Recently ranked in the top 10 of *Fortune's* **"100 Best Companies to Work for in America,"** Merck & Co., Inc. discovers, develops, manufactures and markets a broad range of innovative products. We currently have an exciting opportunity for qualified candidates to join our team at our **West Point, PA** location of Merck Research Laboratories.

Neuroscientist

In this role, you will be responsible for supporting Behavioral Neuroscience programs relating to development of new analgesic compounds while conducting in-vivo behavioral and electrophysiological studies in a variety of species.

BS or MS degree in Behavioral Neuroscience, General Neuroscience or equivalent is required. Previous experience working with non-primates is a must, and experience with primates is highly desired. Candidates must possess strong computer skills and the ability to work independently. Experience with a variety of experimental behavior paradigms and electrophysiological recording is preferred.

In return for your considerable skills, 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. For immediate consideration, please visit **www.merck.com/careers** or forward your resume and cover letter, including salary requirements to: **merckcareers@alexus.com** indicating **"Source Code = PSM04553"** in the subject line of your email. You may also submit your resume via fax to: **(888) 568-0844** or by mail to: **Merck & Co., Inc., PO Box 3058, Scranton, PA 18505.** Please indicate **"Source Code = PSM04553"** to be considered. We are an Equal Opportunity Employer. M/F/D/V. Principals only.

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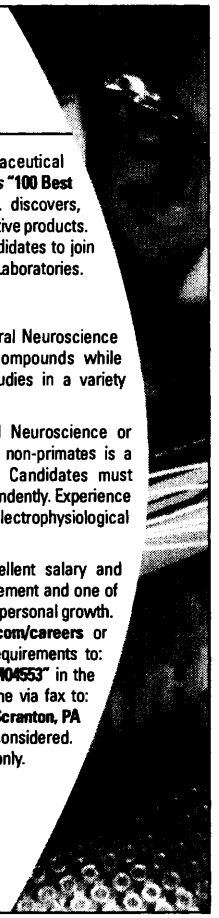


WORLD HEALTH ORGANIZATION (WHO)

International Agency for Research on Cancer (IARC)

At its Headquarters in Lyons, France, IARC has an opening for the position of

Chief of the Unit of Genetic Cancer Susceptibility

to be filled as of June 1, 2002. The successful candidate will lead a Research Unit focusing on genetic susceptibility to cancer and will be responsible for developing, directing and overseeing original projects aimed at evaluating through a molecular approach the role of inherited and somatic genetic alterations as well as environmental factors in cancer development.

The incumbent will interact and collaborate with other IARC scientists and outside collaborators in the implementation and execution of molecular epidemiology studies. He/she will represent the Agency at scientific meetings, keep abreast of the methodological developments in this field and supervise staff assigned to his/her Research Unit.

Applicants should have an M.D. or a Ph.D. in molecular genetics or related field. They should have advanced knowledge of molecular genetics and cancer biology and an excellent publication record in the identification of genes predisposing to cancer. At least 10 years' experience in molecular genetic studies is required, including documented achievements in the planning/development and coordination of collaborative projects, and a record of successful experience in training/supervising staff. Additional desirable qualification: experience in high-throughput genotyping for the identification of multigenic traits. Very good knowledge of English and a working knowledge of French are expected.

The grade of the post is P5. The initial appointment will be for two year, the first being probationary. The annual salary level is US$ 65 176 tax-free at single rate and US$ 70 157 for a staff member with dependants, plus a cost of living element which is currently 11% of the above figures.

Applications should be sent by **15 February 2002** to: Personnel Office, IARC, 150 Cours Albert Thomas, 69008 Lyon, France, Fax +33 4 72 73 83 35, E-mail: **personnel@iarc.fr**

For more information, see IARC home page: http://www.iarc.fr under "vacancies". When applying, please quote the vacancy notice number **P/RC/01/10-E** and complete the WHO Personal History form, which is obtainable from the home page. *Applications from women are encouraged.*

Lillian Fountain Smith Endowed Chair in Human Nutrition

Department of Food Science and Human Nutrition
Colorado State University
Fort Collins, CO 80523-1571

The Department of Food Science and Human Nutrition in the College of Applied Human Sciences at Colorado State University invites applications from outstanding scientists to fill the Lillian Fountain Smith Endowed Chair in Human Nutrition. We seek an accomplished mentor and experienced communicator with global perspectives for this position. Doctorate or MD degree in nutrition or health related field; strong, active extramurally supported basic nutrition research program in area such as cellular and molecular nutrition, obesity and diabetes, functional foods and risk mitigation, optimizing physical and neurological development, metabolic endocrinology and physiology, or other nutrition related chronic disease; demonstrated track record of excellence consistent with appointment at the Professor rank. The successful candidate will provide leadership in the development of collaborative research, communicate scientific knowledge, and contribute to graduate and postdoctoral training.

Send letter describing your qualifications, description of your research program, future goals, complete CV, up to 5 recent publications, and names of 3-5 references with address and phone numbers to:

Dr. Chris Melby, Search Chair
Department of Food Science and Human Nutrition
Colorado State University
Fort Collins, CO 80523-1571

Inquiries can be made via e-mail at:
SmithChairSearch@cahs.colostate.edu

Applications accepted until position is filled; deadline for full consideration is January 31, 2002.

CSU is EEO/AA Employer.

Assistant or Associate Professors

The Department of Pharmacology at The University of Iowa (**http://www.medicine.uiowa.edu/pharmacology/**) invites applications for three tenure-track faculty positions. Faculty who have strengthened our presence in Neuroscience and Cancer Biology have been recently hired. We now seek to add faculty addressing important questions in the following research areas:

- structure, function and/or regulation of G protein coupled receptors and G proteins and their downstream signaling pathways.
- pharmacological or physiological genomics or proteomics.
- integrative pharmacology or toxicology.

Applicants using other research strategies relevant to pharmacology or toxicology will also receive full consideration by the search committee. Successful candidates will be expected to establish and maintain dynamic, externally supported research programs, to excel in teaching, and to actively contribute to strong departmental and interdisciplinary graduate programs.

Candidates with a Ph.D. and/or M.D., post-doctoral experience and an excellent record of research productivity and quality should submit applications before 30 April 2002. Curriculum vitae, summary of research accomplishments (with copies of key publications), description of future research plans, and the names/addresses of at least three references should be sent to:

Chair, Search Committee
Department of Pharmacology (BSB 2-471)
The University of Iowa College of Medicine
Iowa City, IA 52242-1109

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

PROFESSOR/ASSOCIATE PROFESSOR OF NUTRITIONAL EPIDEMIOLOGY

The Nutrition Division within the Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, invites applications for a full-time, tenure stream faculty position at the level of Professor or Associate Professor. This position is available immediately and requires a doctoral degree and training in Epidemiology and nutrition. A specific interest in nutrition-genetic laboratory studies of etiology and prevention in humans related to cancer, cardiovascular disease, aging or reproductive outcomes is desirable. The successful candidate will be responsible for leading the Nutrition Epidemiology program and must have a strong research record of accomplishments, including the ability to secure funding, work with the laboratory nutrition programs, and teach and advise students. The department has major research funding in nutrition related populations etiology and prevention studies, and a Nutritional Biochemistry Laboratory and international studies. The School of Public Health has a very strong laboratory and Population Genetics Program.

Applications will be reviewed until position is filled. Send letter of intent, curriculum vitae, and the names of three references to: **Position number 002385, c/o L. DeLuco, Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA 15261.**

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

GLOBAL OPPORTUNITIES

NATIONAL CANCER CENTER KOREA

The National Cancer Center is an organization to provide cancer management, prevention, and treatment in Korea. We invite applications for **SCIENTISTS** both at the senior and junior level. Desirable areas of research focus include **molecular biology, biochemistry, immunology, virology, genomics, proteomics, bioinformatics, clinical biostatistics, transgenic/knockout mouse biology,** and **animal testing facilities,** etc. Applicants must have a Ph.D. or equivalent degree in related discipline with a proven publication record. Salary and rank will be commensurate with qualifications and experience. Successful candidates will be expected to direct vigorous basic and/or translational research and launch new initiatives in targeted therapy for cancer. Further information about National Cancer Center is available at: http://www.ncc.re.kr.

Review of applications will begin immediately, and the search will remain open until the position is filled. Applicants should send a letter of application with a detailed curriculum vitae, a statement of future career/research objectives, and the names and addresses of three references to:

Dr. Chang-Min Kim, Director
National Cancer Center Research Institute
809 Madu-1-dong, Ilsan, Goyang,
Gyeonggi, 411-764, Korea

Tel. +82-31-920-1503
Fax. +82-31-920-1511
e-mail: cmkim53@ncc.re.kr

Senior Executive Service Employment Opportunity

Director
Division of Clinical and Population-based Studies

Center for Scientific Review
National Institutes of Health
Apply by February 11, 2002

Be a leader in shaping the course of peer review at the National Institutes of Health. The Center for Scientific Review (CSR) is seeking a new Director for its Division of Clinical and Population-based Studies. This Division is responsible for conducting scientific merit reviews of research and research training grant applications in the areas of (1) health of the population; (2) risk, prevention and health behavior; (3) surgery, applied imaging, and applied bioengineering; and (4) brain disorders and clinical neuroscience.

Responsibilities of the Director include (1) serving as a key member of the Center's senior leadership team; (2) tracking progress across broad fields of science; (3) participating in strategic planning for the Center's scientific and management goals; (4) overseeing activities of several Integrated Review Groups; and (5) providing second level management to the large group of professional staff within the Division.

This is a Civil Service position with a base salary ranging from $120,261 to $133,700 per year, depending on qualifications. A recruitment bonus of up to 25% of base pay may be available to a non-Federal candidate selected for this position, subject to individual approval. A relocation bonus of up to 25% may be available to a permanent Federal employee who must relocate to accept this position, subject to individual approval. Physicians may be eligible for a Physicians Comparability Allowance up to $30,000 per year. Benefits include health and life insurance options, retirement, savings plans, paid holidays, and vacation and sick leave. Members of the Commissioned Corps of the U.S. Public Health Service, SES reinstatement eligibles, and individuals both inside and outside the Federal Government will be considered.

Application procedures and qualification requirements may be accessed through the CSR web site at **http://www.csr.nih.gov/employment**, or by calling the Human Resources Branch at **(301) 435-1122**.

Selection for all positions will be based on merit, with no discrimination for non-merit reasons, such as race, color, sex, national origin, marital status, handicap, age, sexual orientation, or membership/non-membership in an employee organization. Applications must be postmarked by February 11, 2002.

NIH is an Equal Opportunity Employer

POPULATION ECOLOGY

UNIVERSITY OF CALGARY

The Department of Biological Sciences wishes to build on existing strengths in Population Ecology (www.ucalgary.ca/ecology) by inviting applications for tenure-track faculty and post-graduate research positions. We are seeking applicants for a tenure-track assistant professor position with a strong background in Population Ecology. Individuals interested in dynamics of populations, predator-prey dynamics, or food-web dynamics are highly encouraged to apply. We are particularly interested in individuals who integrate mathematical theory with empirical work or mathematical biologists working in Population Ecology. Researchers testing fundamental ideas concerning dynamics of biological populations in areas of Conservation Biology, Management of Biological Resources, or Climate Change are encouraged to apply. The successful candidate will have a strong research record in Population Ecology, will be expected to establish an active, externally funded research program, and will participate in teaching at the undergraduate and graduate levels. A complete application should include a curriculum vitae, representative publications and statements of research and teaching interests. Candidates should arrange to have three letters of reference sent under separate cover. Deadline for receipt of all material is **January 31, 2002**. Send to **Dr. D.M. Reid**, Head, Department of Biological Sciences, Faculty of Science, University of Calgary, 2500 University Dr. N.W., Calgary, AB T2N 1N4. Fax: (403) 289-9311; e-mail: dmreid@ucalgary.ca.

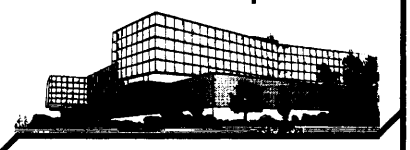
Post-graduate Researchers, Post-Doctoral Fellow and two PhD Studentships. Individuals studying the spatial and/or temporal dynamics of ecological systems are encouraged to apply. These positions will contribute to projects that tightly link theory and experiments on the dynamics of biological populations. Individuals interested in developing and testing ideas in freshwater systems will have some priority, but projects on plant-herbivore dynamics, coupled predator-prey systems in terrestrial habitats, or contrasting dynamical processes in aquatic and terrestrial systems would be of definite interest. Post-doctoral and post-graduate researchers are encouraged to contact **Dr. E. McCauley** (Canada Research Chair in Population Ecology), at the above address regarding these PDF and studentship positions. E-mail: mccauley@ucalgary.ca.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. If suitable Canadian citizens or permanent residents cannot be found, other individuals will be considered. The University of Calgary respects, appreciates and encourages diversity.

www.ucalgary.ca

Freie Universität Berlin – Fachbereich Humanmedizin

Universitätsklinikum Benjamin Franklin



Freie Universität Berlin – DEPARTMENT OF HUMAN MEDICINE – BENJAMIN FRANKLIN MEDICAL CENTRE (UKBF) – INSTITUTE OF PHYSIOLOGY in cooperation with DEUTSCHES HERZZENTRUM BERLIN (DHZB, German Heart Center Berlin)

Associate Professor

in Physiology and Pathophysiology of Vascular Regulations

Vacancy: 447/01

Applications are invited for the position of Associate Professor in Physiology and pathophysiology of vascular regulations. The successful candidate will be required to provide teaching and research in the said area. The post is linked to the function of head of a working group which is to be established on the basis of the cooperation agreement between DHZB and UKBF. She/he will be required to teach at least one course per semester (2 hrs/week) and to lead experimental projects. In line with article 100 of the Higher Education Act of the land of Berlin (Berliner Hochschulgesetz), a postdoctoral lecturing qualification (Habilitation) or comparable qualifications for a teaching career in higher education are required.

The successful candidate will have several years experience in research on the circulatory system, especially microcirculatory physiology, including the lung. She/he will be interested in basic science related to clinical applications and expected to participate in the activities of the research group "Mechanisms and pathomechanisms of vascular regulation", and the priority research programme "Cardiovascular diseases". She/he will be required to participate in lectures and seminars in the area of pathophysiology within the framework of integrated courses offered by the department. The successful candidate is expected to have experience in securing external funding and in managing externally funded projects, as well as international experience in teaching and research.

In general, the language of instruction will be German, but some activities may be offered in English. Non-German speaking applicants will be expected to learn German within two years. The Freie Universität Berlin is an equal opportunities employer.

The successful candidate will be offered civil servant status (Professor Grade "C3 auf Zeit" according to the German system).

Applications, quoting Vacancy 447/01, must reach the Freie Universität Berlin – Fachbereich Humanmedizin – Dekanat – Hindenburgdamm 30 – 12200 Berlin – Germany not later than 4 weeks after the publications of this advertisement.

Applications should include the following: a letter describing your interest in the position and pertinent experience, a curriculum vitae, the names and addresses of three referees, a list of publications, and copies of the certificates of academic qualifications held.

An der Medizinischen Fakultät der Universität Zürich ist die Stelle eines/r

Professors / Professorin für Physiologie

auf das Wintersemester 2003 / 2004 neu zu besetzen.

Die Professur ist am Physiologischen Institut der Medizinischen Fakultät angesiedelt. Bewerber/-innen sollen sich über eine selbständige, international ausgewiesene Forschung ausweisen. Als Forschungsthemen kommen folgende Schwerpunkte in Frage: kardiovaskuläres System, hämatopoetisches System, gastrointestinales System, respiratorisches System oder Hormon-Rezeptor-Signalmechanismen. Die Forschung soll von (patho-)physiologischer Relevanz sein und sowohl systemphysiologische Ansätze als auch moderne Methoden der Zell- und Molekularbiologie beinhalten.

Bewerber/innen müssen bereit sein, sich am Unterricht für Studierende der Medizinischen Fakultät und der Mathematisch-naturwissenschaftlichen Fakultät aktiv zu beteiligen. Eine medizinische Grundausbildung ist erwünscht - jedoch keine Bedingung für eine erfolgreiche Bewerbung.

Weitere Informationen über das Physiologische Institut finden Sie unter **www.unizh.ch/physiol**

Wir bitten Sie, schriftliche Bewerbungen bis zum 28. Februar 2002 an das Dekanat der Medizinischen Fakultät, Berufungskoordination, Gloriastrasse 18, CH-8091 Zürich, zu richten. Für allfällige Auskünfte wenden Sie sich bitte an den Präsidenten der Berufungskommission, Prof. Dr. P. Groscurth, Anatomisches Institut, Universität Zürich, Winterthurerstrasse 190, CH-8057 Zürich (Tel. +41-1-635 53 11).

Die Bewerbungsunterlagen müssen die im 'Merkblatt über Berufungsverfahren' erwähnten Angaben enthalten. Das Merkblatt kann beim Dekanat der Medizinischen Fakultät (Fax +41-1-634 10 79) oder per Internet unter **www.med.unizh.ch/dekanat/richtform.html** bezogen werden.

UNIVERSITY OF PENNSYLVANIA

Assistant or Associate Professor

The Department of Pathology in the School of Dental Medicine, University of Pennsylvania is seeking an outstanding scientist for a tenure-track faculty position at either the **Assistant or Associate Professor** level. Candidates must have a combined D.M.D., M.D., V.M.D./Ph.D. degree or equivalent qualifications and postdoctoral training. The successful candidate is expected to develop, or have previously established, a high-quality, independent research program in cellular and molecular pathogenesis of disease. Areas of interest include inflammation, microbial pathogenesis, neoplasia and diseases associated with bone, connective tissue, and growth and development. The School of Dental Medicine and the University offer opportunities for collaborative research in many areas. The successful candidate will participate in the teaching program of the Department of Pathology which includes teaching of general, systemic and oral pathology to dental students.

Applicants should send a letter that includes a statement of research interests, curriculum vitae and bibliography. The candidate should also include a list of three referees. Applications should be sent to: **Dr. Bruce J. Shenker, Chair, Department of Pathology, University of Pennsylvania School of Dental Medicine, 4010 Locust Street, Philadelphia, PA 19104-6002.**

PENN is an Equal Opportunity/Affirmative Action Employer. Applications are encouraged from qualified women and minorities.

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mayo

Postdoctoral Fellow
Mayo Clinic Molecular Medicine Program
Rochester, Minnesota, U.S.A.

Mayo Clinic Rochester has established a Molecular Medicine Program with several groups working on gene therapy using different viral systems. In the group of **Dr. Richard Vile** a motivated individual is required for the construction of targeted vector systems for cancer gene therapy.

Expertise in any or all of molecular biology, virology, immunology and cell biology would be required. Salary will be determined by the successful candidate's experience, and an attractive benefit package is available. Mayo Clinic Rochester is a not-for-profit organization. Mayo integrates research with clinical practice and education in a multi-campus environment. For further information please visit **http://www.mayo.edu/research/mmp**.

Applications, including curriculum vitae, bibliography, and summary of past accomplishments should be sent to:

Dr. Richard G. Vile
Mayo Clinic
Molecular Medicine Program
Guggenheim 18
200 First ST SW
Rochester, MN 55905, U.S.A.
vile.richard@mayo.edu

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

St Jude Children's Research Hospital
ALSAC · Danny Thomas, Founder

FACULTY POSITION IN VIROLOGY

A faculty position is available within the Division of Virology in the Department of Infectious Diseases at **St. Jude Children's Research Hospital.** Although applicants at the level of assistant member are being sought, outstanding investigators with appropriate research interests and qualifications at the associate member level will also be considered. Individuals with programs focusing on cytomegalovirus, adenovirus or respiratory syncytial virus are particularly encouraged to apply; however, all areas of virology research related to human disease will be considered. Current programs in virology focus on influenza, parainfluenza, Venezuelan equine encephalitis virus, HIV and Epstein-Barr virus. Excellent opportunities exist for collaborative interactions with basic science and clinical investigators in the Departments of Infectious Diseases, Immunology, Biochemistry, Genetics, Tumor Cell Biology, Developmental Neurobiology, Structural Biology, Molecular Pharmacology, Pathology and Hematology/Oncology. In addition to new facilities and excellent start-up funds, salaries are nationally competitive and include a generous benefits package. Applicants should submit their curriculum vitae, a summary of research accomplishments and goals and the names of three references to:

Jeffery T. Sample, Ph.D.
Department of Biochemistry
332 North Lauderdale Street
Memphis, TN 38105
E-mail: chris.winston@stjude.org

SJCRH is an Affirmative Action/Equal Opportunity Employer.

UNIVERSITY OF CALGARY

Creating the future of health.

The Neuroscience Research Group (www.ucalgary.ca/~neuro) and the Department of Clinical Neurosciences (www.ucalgary.ca/UofC/faculties/medicine/CNS) invite applications for two full-time positions at the Assistant Professor level or higher. While duties include teaching, graduate supervision and clinical duties (if appropriate), 75% of the time will be protected for research. These positions offer an excellent opportunity to develop a vigorous independent research program. Successful candidates will use innovative approaches and will interact with other members of the neuroscience research community in Calgary.

The Neuroscience Research Group and the Department of Clinical Neurosciences is a multidisciplinary academic group of physicians and scientists within the rapidly growing Faculty of Medicine, which is in the process of building a major new research facility. Calgary is a vibrant, multicultural city of ~1,000,000 near the Rocky Mountains, Banff National Park and Lake Louise.

- **Neuroimmunologist** – We are seeking a candidate investigating immunological involvement in neurological diseases such as Alzheimer's. Outstanding scientists with interests in neuroimmunology and/or neuroinflammation, particularly with respect to Alzheimer's disease, are especially invited to apply. Additional start-up funding will be provided through the Brenda Strafford Chair in Alzheimer Research.
- **Neurogeneticist** – We are seeking a candidate investigating the genetic basis for neurological diseases. Applications are invited from outstanding neurogeneticists with interest in ion channels and other membrane proteins related to the neurological diseases such as epilepsy, migraines, neuromuscular disorders and/or mental illnesses.

Qualifications for both positions include a PhD, MD or equivalent and an established record of publications and demonstrated expertise in this area. Salary support and start-up funds are available through successful application to the Alberta Heritage Foundation for Medical Research and/or the Canadian Institutes of Health Research. Eligibility for licensure in the Province of Alberta is required if the selected candidate will be providing patient care.

We seek applications from all interested persons. Please submit a curriculum vitae and a statement of research interests, and arrange to have three letters of reference sent directly, by **February 28, 2002**, to: **Dr. Brian A. MacVicar**, Chair, Neuroscience Research Group, Faculty of Medicine, 3330 Hospital Drive N.W., Calgary, Alberta, Canada T2N 4N1. E-mail: macvicar@ucalgary.ca

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Calgary respects, appreciates and encourages diversity.

www.ucalgary.ca

Two vacancies:
Electrophysiology / Molecular Biology/Cell Biology
Stephen Shears, Ph.D.

Two postdoctoral positions are available in the Inositol Phosphate Signaling Section of the Department of Signal Transduction at NIEHS. One vacancy requires experience in electrophysiology in order to study the influences of inositol phosphates upon ion channels. The other vacancy is for a molecular biologist with an interest in cell biology, and experience with viral transfection systems would be helpful. Both positions require experience in cell culture.

Applicants should have a Ph.D. and/or M.D. with no more than 5 years post-doctoral experience. Please apply directly as soon as possible to Stephen Shears. E-mail shears@niehs.nih.gov or Fax 919-541-0559

NIEHS

NIH is an Equal Opportunity Employer

Tenure/Tenure-Track Position
National Institute of Allergy and Infectious Diseases (NIAID)

The Laboratory of Intracellular Parasites, NIAID, NIH, Rocky Mountain Laboratories, Hamilton, Montana, has a tenured or tenure-track position available to pursue independent studies of the pathophysiology and molecular basis of pathogenesis of *Coxiella burnetii*, the agent of Q fever. The successful candidate will be expected to incorporate modern technologies including proteomics, genomics, cell biology, and immunochemistry to (i) define the extent of strain variation in nature and (ii) characterize the unique virulence factors that contribute to the pathogenesis of these organisms. The Rocky Mountain Laboratories offers state-of-the-art facilities for genomics, proteomics, DNA microarray, and biological imaging in a recently renovated modern laboratory setting. A new BL3 containment building with BL3 animal capacity and a laboratory module committed to Q fever research is available. Candidates must hold a Ph.D, D.V.M, or M.D. degree and have a minimum of 2 years post-doctoral experience in relevant areas of investigation. Preference will be given to those candidates with experience or interest in intracellular parasitism and a strong background in cellular biology, molecular biology, and cell culture models of infection. The Rocky Mountain Laboratories has an extensive *C. burnetii* culture collection and technical expertise on site to assist in the start-up and training in the propagation and handling of the agent. Resources and appointment mechanism will be commensurate with experience.

The NIH Rocky Mountain Laboratories supports research on a number of significant bacterial and viral human pathogens including *Chlamydia, Mycobacteria, Staphylococcus, Streptococcus, Borrelia, Neisseria*, retroviruses, HIV, and transmissible spongiform encephalopathies (TSE). The laboratory is located in the scenic Bitterroot Valley of western Montana with easy access to some of the finest outdoor recreational opportunities in North America. Additional information on the position may be obtained from **Dr. Ted Hackstadt (ted_hackstadt@nih.gov).**

Application Process: Applicants must be U.S. citizens, resident aliens, or nonresident aliens with or eligible to obtain a valid employment authorized visa. Salary depends on degree and qualifications. Other incentives may be available. Applicants must send a curriculum vitae, bibliography, three letters of reference, selected reprints and a brief statement of research interest to: **Ms. Michelle Garvey, Office of Human Resources Management, NIAID, Bldg. 31, Room 7A27, 31 Center Drive, MSC 2520, Bethesda, Maryland 20892-2520** by February 1, 2002. Applicants interested in applying must submit a complete package and cite vacancy announcement NIAID-01-217 on the package. All information provided by applicants will remain confidential and will only be viewed by authorized officials of the NIAID.

The NIH is an Equal Opportunity Employer

ENDOWED CHAIR IN DEVELOPMENTAL BIOLOGY
University of Minnesota

The University of Minnesota Department of Pediatrics, in conjunction with the Department of Genetics, Cell Biology, and Development and the Institute of Human Genetics, invites applications at the **ASSOCIATE** or **PROFESSOR** level (tenured position) to fill the Harrison Chair in Developmental Biology. The successful candidate is expected to have an internationally recognized research program that focuses on elucidating mechansims of human development and disease. Individuals with expertise in mouse genetics are especially encouraged to apply; however, candidates with expertise in other developmental models will also be considered. The applicant is anticipated to assume a leadership role within the Developmental Biology Center at the University of Minnesota and to foster research ties with Clinician-Scientists. The Developmental Biology Center comprises approximately 20 highly interactive faculty who utilize many model systems including *Drosophila, C. elegans*, mouse, zebrafish, *Xenopus*, and *Arabodopsis* to address fundamental principles guiding development. The successful candidate is expected to maintain a strong, externally funded research program and to participate in the training of graduate students and Clinician-Scientists. This position comes with generous start-up resources and the ability to recruit up to two individuals in other areas relevant to human development and disease. Applicants will be reviewed starting March 15, 2002; however, the position will remain open until filled by a suitable applicant.

Interested applicants should submit curriculum vitae, statement of research interests, and the names of four references to:

Susan A. Berry and Stephen C. Ekker
Search Committee Chairs
Departments of Pediatrics and Genetics
Cell Biology, and Development
University of Minesota
Mayo Mail Code 75
420 Delaware Street S.E.
Minneapolis, MN 55455
Telephone: 612-624-5958 FAX: 612-626-5262
E-mail: berry002@umn.edu or
ekker001@umn.edu

The University of Minnesota is an Equal Opportunity Educator and Employer.

Title: **ASSISTANT/ASSOCIATE PROFESSOR**, nine month, tenure track; 75% research/25% teaching. Location: Fisheries and Allied Aquacultures, Auburn University. Responsibilities: Procure external funding to develop a nationally recognized research program in aquaculture production systems with an emphasis on catfish, develop scientific collaborative research to improve management systems for aquaculture facilities, teach courses at the undergraduate/graduate level, advise undergraduate/graduate students, coordinate the nonthesis Master of Aquaculture program.

Qualifications: Completion of a Ph.D. by December 31, 2001, in aquaculture/fisheries or closely related field and experience growing catfish and other aquatic animals; *proof of authorization to work in the United States.* Desired qualifications: proven ability to work effectively with students and producers, demonstrated success in obtaining extramural funding, ability to work collaboratively with Scientists in other disciplines, evidence of teaching aptitude, documented verification of peer-reviewed publications, demonstrated ability to develop applied research programs, experience in commercial aquaculture, and skill in program coordination.

Salary: Salary is commensurate with education and years of experience. Review date: Review will begin December 15, 2001, and continue until a suitable candidate is selected. Contact: **Dr. Leonard L. Lovshin, Chair; Telephone: 334-844-9117; e-mail: llovshin@acesag.auburn.edu.**

POSITIONS OPEN

TENURE-TRACK FACULTY POSITION

The Department of Psychiatry at Yale University School of Medicine is recruiting a Neurobiologist for a second tenure-track faculty position in the Division of Molecular Psychiatry. This basic research-oriented Division comprises a multidisciplinary faculty focused on elucidating fundamental mechanisms of neuronal function and how they relate to complex behavior including major psychiatric illnesses and drug abuse. Attractive candidates are those with expertise in analysis of the cellular and molecular basis of synaptic remodeling. Applicants must have a Ph.D. and/or M.D. degree with demonstrable research contributions. Excellent start-up resources and core facilities are available. The deadline for submitting all materials for application is February 1, 2002. For full consideration, please send curriculum vitae, representative reprints, a brief statement of research interests, and three letters of reference to:

Ronald S. Duman, Ph.D.
Search Committee Chairman
Director, Abraham Ribicoff Research Facilities
Department of Psychiatry
Yale University School of Medicine
34 Park Street
New Haven, CT 06508

ASSISTANT OR ASSOCIATE PROFESSOR OF ENTOMOLOGY/INVERTEBRATE ZOOLOGY. Position 02-27. Nine-month, tenure-track; summer teaching available. Fall 2002. $36,666 to $41,301. Required: Doctorate with specialization in entomology or invertebrate zoology, demonstrated ability or potential to establish a research program that involves undergraduate and graduate students, teaching experience at the undergraduate level, strong interest in teaching excellence. Preferred: experience in field and laboratory techniques; additional expertise in such areas as phylogenetics, science education, invertebrate zoology, and/or agricultural entomology. Teach entomology, parasitology, and zoology as well as participation in lower-division, upper-division, and graduate courses. Submit letter of application, curriculum vitae, statement of teaching philosophy, representative reprints, complete academic transcripts (student copy acceptable), and three letters of reference to: **Human Resources Director, Sul Ross State University, Box C–13, Alpine, TX 79832. Telephone: 915-837-8058.** Review of applications will begin February 15, 2002, and continue until the position is filled. Sul Ross is a member of the Texas State University System. Visit our **website: http://www.sulross.edu.** *Equal Employment Opportunity/Affirmative Action Employer. Qualified women and minorities encouraged to apply.*

FACULTY POSITION IN BEHAVIORAL GENETICS
Brown University

The Department of Ecology and Evolutionary Biology (EEB) is a group of strongly interactive faculty with particular strengths in ecology, evolutionary genetics, behavior, and morphology. We announce a one-year, nontenure-track **VISITING ASSISTANT PROFESSORSHIP** for a Behavioral Geneticist available 1 July 2002. The position may be renewable subject to availability of funds. Applicants must have a Doctorate; potential for excellence in teaching; research training in behavioral genetics or a related area; and potential to interact productively with faculty in fields of genetics, evolutionary biology, and ecology.

Responsibilities include teaching a seminar course in behavioral ecology and a course in introductory genetics (half of course) or behavioral genetics. Applicants should submit résumé, statement of teaching and research interests, and representative reprints and have three letters of reference (to be received by 15 February 2002) sent to: **Dr. D. H. Morse, Box G-W, Department of Ecology and Evolutionary Biology, Brown University, Providence, RI 02912.** *Brown University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

DEPARTMENT CHAIR
DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCES
University of California Los Angeles
School of Public Health

UCLA is searching for a Chair of its Department of Environmental Health Sciences **(website: http://www.ph.ucla.edu/ehs/)**. The Department includes a range of programs in relevant areas. The M.S., M.P.H., Dr.P.H., and Ph.D. degrees are offered in environmental health science; the Department also houses two interdisciplinary graduate programs and six center grants. Opportunities for multidisciplinary collaboration are abundant. Successful candidates must have expertise in a relevant discipline and outstanding research and leadership skills. Appointment level and salary will be determined based on the candidate's experience and qualifications. Please send curriculum vitae and letter of interest no later than April 1, 2002, to:

Gail G. Harrison, Ph.D.
Chair, EHS Search Committee
UCLA School of Public Health
P.O. Box 951772
Los Angeles, CA 90095-1772
FAX: 310-206-3773
E-mail: gailh@ucla.edu

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

TENURE-TRACK ASSISTANT PROFESSOR
Neurophysiologist

The Biological Sciences Department at California State Polytechnic University, Pomona, seeks a Neurophysiologist who uses molecular biology in addressing basic questions in neuroscience. Use of modern optical methods is preferred but not required. The successful candidate will have the potential for excellence in undergraduate teaching and for developing an externally funded research program that will involve undergraduate and Master's students. Teaching responsibilities will be drawn from among the following (based on interests and background): human physiology; contributions to other physiology, neuroscience, and cell biology courses; additional neuroscience courses in area of specialty. All department faculty may be asked to teach introductory biology courses. A Ph.D. in neurophysiology or related field is required at the time of appointment. Teaching and postdoctoral research experience is preferred. Position begins fall of 2002.

For a complete description, see: **website: http://www.csupomona.edu/~biology; e-mail: dfhoyt@csupomona.edu.** Initial review of applications will begin Feburary 1, 2002, and continue until position is filled. *Affirmative Action/Equal Opportunity Employer.*

EVOLUTION OF DEVELOPMENT

The University of Arkansas, Department of Biological Sciences, invites applications for a tenure-track **ASSISTANT PROFESSOR** in evolutionary development. We seek a Biologist working on the evolution of developmental processes in eukaryotes. Successful candidates must have a Ph.D. and postdoctoral experience and will be expected to develop a funded research program, supervise graduate students, and teach at the graduate and undergraduate levels. Application review will begin February 8, 2002, and will continue until the position is filled. Applications must include curriculum vitae, statements of research and teaching interests, reprints, and at least three letters of recommendation. Applications should be addressed to: **Dr. Steven J. Beaupre, Evolution of Development Search Committee Chair, Department of Biological Sciences, Room 19 WAAX, University of Arkansas, Fayetteville, AR 72701.** For information about the Department of Biological Sciences, please visit **website: http://biology.uark.edu/bisc.html.** *The University of Arkansas is an Equal Opportunity/Affirmative Action Employer. Applicants must have proof of legal authority to work in the United States at the time of hire.*

FACULTY POSITION, RANK OPEN
Chemical Engineering/College of Medicine
University of Illinois at Urbana-Champaign

The Department of Chemical Engineering and the College of Medicine of the University of Illinois at Urbana-Champaign invite applications for a full-time, **TENURE-TRACK POSITION** in chemical engineering. A Ph.D. and/or M.D. degree, postdoctoral experience, and evidence of outstanding research potential are required. The appointee will be expected to develop a vigorous, independently funded research program at the interface of chemical engineering and medical science. The field of research is not restricted, but candidates will be given preference whose research accomplishments and interests demonstrate clear ties to modern biomedicine. Salary and appointment level are open and will depend upon qualifications. A preferred starting date for this position is August 2002. The appointee's teaching responsibilities will be divided between the Department of Chemical Engineering and the College of Medicine. Chemical engineering at the University of Illinois is internationally recognized for research excellence and is ranked among the top 10 programs in the United States. The College of Medicine has one of the largest M.D./Ph.D. programs in the country and a diverse and vigorous research faculty. The University offers a highly interactive, interdisciplinary research environment; outstanding engineering, computational, and physical science programs; and state-of-the-art research facilities. Submit curriculum vitae with a list of publications, summary of research interests, and arrange to have at least three recommendation letters sent to:

Professor Deborah Leckband, Chair
Chemical Engineering/College of Medicine
Search Committee
University of Illinois at Urbana-Champaign
107 Roger Adams Laboratory, Box C-3
600 South Mathews Avenue
Urbana, IL 61801

In order to ensure full consideration, applications should be received by January 15, 2002. *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

INTEGRATED SCIENCE POSITIONS
University of Alaska Anchorage

The College of Arts and Science is accepting applications for a tenure-track position at the rank of **ASSISTANT PROFESSOR** in a natural science (biology, chemistry, geology, physics, or astronomy preferred) for fall semester 2002. Additionally, the college is accepting applications for two one-year term appointments at the rank of **ASSISTANT PROFESSOR** in a natural science (biology, chemistry, geology, physics, or astronomy preferred) beginning fall semester 2002. Pending funding, these term appointments may be converted to tenure-track appointments. Tenure will reside in the department most closely aligned with area of disciplinary expertise. Familiarity with interdisciplinary study and undergraduate science education preferred. Interest in training future teachers in science content areas in association with School of Education faculty required. All positions will be expected to coordinate and teach portions of the integrated sciences core in the Bachelor of Liberal Studies program, disciplinary courses, and conduct research in area of disciplinary expertise. Teaching experience and demonstrable commitment to research required. Postdoctoral experience preferred. Entry-level salary commensurate with experience.

Send letter of application; curriculum vitae including publications list; description of teaching philosophy; research interests; future teaching aspirations; and names, e-mail addresses, and telephone numbers of three references to: **University of Alaska Anchorage, Human Resource Services, North Residence Hall, 3555 Sharon Gagnon Lane, Anchorage, AK 99508**. Review of applications will begin February 20, 2002, and continue until filled. Refer to **website: http://www.finsys.uaa.alaska.edu/uaahrs** for additional information.

POSITIONS OPEN

BIOCHEMISTRY ASSISTANT/ASSOCIATE PROFESSOR POSITION
University of North Texas, Denton, Texas

The Department of Biological Sciences (**website: http://www.biol.unt.edu**) invites applications for a tenure-track/tenured position in biochemistry beginning in September 2002. Successful candidates will be expected to contribute to a strong research program and participate in instruction at the undergraduate and graduate levels. We are especially interested in candidates having expertise in eukaryotic signal transduction, although candidates with expertise in other areas will be seriously considered. The Department offers excellent opportunities to interact with funded research faculty in the areas of plant science, microbiology, biotechnology, and structural biology.

Located in the Dallas-Fort Worth metroplex, the University of North Texas is a growing institution with an enrollment of approximately 28,000 students. The Department is growing rapidly and has a strong research focus. Excellent research facilities, competitive salary, and generous start-up funds are available. The Department offers undergraduate and graduate (M.S./Ph.D.) degrees in biology, biochemistry, molecular biology, and environmental sciences. Submit curriculum vitae, names of three references, reprints, and statement of research goals to: **Earl G. Zimmerman, Chair, Department of Biological Sciences, P.O. Box 305220, University of North Texas, Denton, TX 76203-5220**.

Review of applications will begin on January 15, 2002, and continue until a suitable candidate is found.

The University of North Texas is an Equal Opportunity/Affirmative Action Institution committed to diversity in its Employment and educational programs, thereby creating a welcoming environment for everyone.

TENURE-TRACK FACULTY POSITIONS
Biotechnology
University of Wisconsin–Parkside

The Department of Biological Sciences invites applications for two tenure-track positions to strengthen the Molecular Biology and Bioinformatics program and serve prominent roles in a biotechnology outreach program beginning fall 2002. The Department is particularly interested in recruiting individuals in the fields of bioinformatics, biomathematics, biophysics, computational sciences, or proteomics. Qualifications include a Ph.D. in an area related to biotechnology and postdoctoral experience. Ability to provide significant support for UNIX and PC computer laboratories is highly desirable. One position will assume leadership in meeting the continuing education needs for employees of the biotechnology industry, and preference will be given to individuals with distance education and online course instruction experience. Expectations for both positions include design and implementation of new courses and instructional strategies responsive to outreach and curricular needs, engagement of the community and industry toward the goal of strengthening education in biotechnology, and ability to conduct significant and independent research.

Applications should include curriculum vitae, reprints, description of research interests, teaching philosophy, names and e-mail addresses of three references, and have three reference letters sent separately to: **Dr. Edward Wallen, Chair, Search and Screen Committee, Department of Biological Sciences, University of Wisconsin–Parkside, Kenosha, WI 53141**. Additional information can be obtained by **e-mail: edward.wallen@uwp.edu** or **Telephone: 262-595-2446** and at our **website: http://www.uwp.edu/academic/biology**. Applications will be reviewed starting January 28, 2002, and continue until the position is filled.

The University of Wisconsin–Parkside is an Affirmative Action/Equal Employment Opportunity Employer/Disabeled/Minorities/Veterans/Women.

POSITIONS OPEN

ATMOSPHERIC SCIENCE SEARCH EXTENDED
University of North Texas, Denton, Texas

The Department of Biological Sciences (**website: http://www.biol.unt.edu**) invites applications for a tenure-track/tenured position beginning in September 2002 in air pollution science at the rank of **ASSOCIATE** or **FULL PROFESSOR**. The successful candidate will add air quality as a new but complementary theme to an active research unit whose strengths have traditionally been in water and land resources. The faculty member will interact with existing programs, conduct research in any of a wide range of air pollution specialities, and will be responsible for making air resources another highly active and visible theme in the Environmental Science program. The successful candidate will participate in building and strengthening the Environmental Health program, a graduate program jointly administered with the UNT School of Public Health.

Located in the Dallas-Fort Worth metroplex, the University of North Texas is a growing institution with an enrollment of approximately 28,000 students. Excellent research facilities and competitive salary and start-up funds are available. The Department offers undergraduate and graduate (M.S./Ph.D.) degrees in biology, biochemistry, molecular biology, and environmental science. Submit curriculum vitae, names of three references, and statement of research goals to:

Earl G. Zimmerman, Chair
Department of Biological Sciences
P.O. Box 305220
University of North Texas
Denton, TX 76203-5220

Review of applications will begin immediately and continue until a suitable candidate is chosen.

The University of North Texas is an Equal Opportunity/Affirmative Action Institution committed to diversity in its Employment and educational programs, thereby creating a welcoming environment for everyone.

FULL/ASSOCIATE/ ASSISTANT PROFESSOR FACULTY POSITIONS
Endocrinology

The Department of Animal Sciences at Rutgers, The State University of New Jersey, invites applications for two academic-year, tenure-track faculty positions in the area of endocrinology, one as Full, Associate, or Assistant Professor and the other as Assistant Professor. The Department is particularly interested in recruiting individuals with experience in transgenic technology and other innovative molecular techniques. The candidates will be expected to establish extramurally funded research programs in areas of endocrinology that will interface with current departmental interests. Teaching at the undergraduate and graduate level in the successful candidate's areas of expertise will be expected. Candidates must have a Ph.D. or equivalent; a demonstrated publication record; and, to be considered at the Full or Associate Professor level, a strong record of extramural funding.

Opportunities exist to interact with faculty from various academic departments and research centers at Rutgers and the University of Medicine and Dentistry of New Jersey as well as with the extensive pharmaceutical and biotechnology industry located in the area. The New Brunswick campus is located in a suburban area of central New Jersey, with convenient access to New York City and Philadelphia, Pennsylvania.

Review of applications will begin immediately and continue until the positions are filled. Interested applicants should submit a letter of application with a statement of research and teaching interests, curriculum vitae, and the names of three references to: **Dr. Wendie Cohick, Search Committee Chair, Department of Animal Sciences, Rutgers, The State University of New Jersey, 84 Lipman Drive, New Brunswick, NJ 08901-8525**. *Rutgers, The State University of New Jersey, is an Equal Opportunity/Affirmative Action Employer.*

Deputy Director, Division of Intramural Research
National Institute of Environmental Health Sciences
National Institutes of Health
Research Triangle Park, North Carolina

The National Institute of Environmental Health Sciences is seeking exceptional candidates to fill the position of Deputy Director, Division of Intramural Research (DIR). The incumbent will serve as a full Deputy Director, DIR, with all related authorities and will participate in directing laboratory and clinical research through 18 laboratories and branches with approximately 550 employees and 250 non-ceiling personnel, and an annual budget of approximately 165 million. The incumbent will provide advice and consultation to the Director, DIR, and participate in establishing overall policies, priorities and procedures for the division, which is organized into three scientific programs and the Office of Clinical Research, highlighting the areas of research excellence of NIEHS. These programs are highly interrelated, interactive and synergistic. Using the multidisciplinary biomedical research approach, the mission of the DIR is to contribute to the basic understanding of biological and chemical processes, the contributions of environmental agents to human disease and dysfunction, and the underlying mechanisms of environmental associated diseases. The Deputy Director, DIR, will also serve as the Deputy Scientific Director, NIEHS, and along with the Director, DIR, will advise the Institute Director on scientific affairs involving multidisciplinary biomedical research programs; participate in developing and recommending policies for the execution of research programs; participate in determining effectiveness of current programs and recommend policies for new programs; and develop new and revised programs to meet national environmental health needs.

Additionally, the Deputy Director DIR will have independent resources and will be expected to carry out independent laboratory research in his/her area of environmental health science.

Candidates must have a M.D., Ph.D. or equivalent degree in an environmental health science discipline. Salary is commensurate with experience and level of accomplishments and will range up to $200,000. A recruitment bonus of up to 25% of base pay or a relocation bonus of up to 25% of base pay may also be available. For additional information, contact Dr. Samuel Wilson, Search Committee Chair, at (919) 541-3267. Applications from minorities and women are particularly welcome. Applicants should submit a curriculum vitae to the following address postmarked by February 11, 2002, to:

Ms. Tammy Locklear (Vacancy Number HNV02-05)
NIEHS Human Resource Management Branch
P.O. Box 12233, Maildrop EC-11
Research Triangle Park, NC 27709
Phone: (919) 541-3317; e-mail: locklea1@niehs.nih.gov

NIEHS/NIH IS AN EQUAL OPPORTUNITY EMPLOYER

Theoretical and Computational Neuroscience Johns Hopkins University Whitaker Biomedical Engineering Institute

The Whitaker Biomedical Engineering Institute of the Johns Hopkins University is seeking applications for a tenure-track position (Assistant or Associate Professor) in theoretical and computational neuroscience. The successful applicant will be expected to develop an independent, funded research program in collaboration with experimental neuroscientists as well as courses in theoretical neuroscience. The systems neuroscience environment at Hopkins consists of over 20 faculty members in Biomedical Engineering, Neuroscience, Psychology, and other departments with research interests in sensory and motor systems, learning and memory, development, regeneration, and neuroengineering. Additional colleagues working on computational modeling of complex biological systems will provide a collaborative environment for theoretical research. For more information, see **http://www.bme.jhu.edu**.

Interested applicants should send a CV, a statement of research interests, and the names of three references to: **Eric D. Young, 505 Traylor Bldg., Johns Hopkins University, 720 Rutland Ave., Baltimore, MD 21205 USA.**

Applications will be accepted until July 1, 2002.

The Johns Hopkins University is an EEO/AA employer. Women and minorities are encouraged to apply.

USDA, AGRICULTURAL RESEARCH SERVICE SUBARCTIC AGRICULTURAL RESEARCH UNIT FAIRBANKS, ALASKA

A Research Leader position is open immediately at the GS-14/15 level. U. S. citizenship is required. Salary is commensurate with experience in the range of $67,765 to $103,623 plus 25% cost of living adjustment and benefits. **There is a potential for a 4.6% general increase in January 2002.** The incumbent provides leadership to a multi disciplinary team and contributes to cooperative efforts with other ARS, public and private research programs. The mission of the unit is to improve the understanding and control of invasive plant pests, plant pathogens or weeds of agricultural importance in subarctic cropping and Alaskan natural systems, to collect and preserve important Arctic plant germplasm resources, and to develop effective and economical utilization of byproducts from fish processing. A Ph.D. or equivalent degree, postdoctoral research experience, demonstrated expertise and research productivity as it relates to the control of invasive plant pests, plant pathogens or weeds are desired. Applicants must address and meet specific placement factors and specialized experience as defined in the official vacancy announcement #ARS-X2W-2036. The vacancy announcement and application forms can be obtained by calling **301-504-1482 or through the web at www.ars.usda.gov. All applications must be postmarked by February 1, 2002. For further information contact Veronica Cullum at 510-559-6071 (fax: 510-559-5779).**

THE USDA IS AN EQUAL OPPORTUNITY PROVIDER AND EMPLOYER.

Columbia University
Department of Biochemistry and Molecular Biophysics
FACULTY POSITION

Columbia University is soliciting applications for a faculty position in the area of electron microscopic studies of biological structure and organization from the atomic to the macromolecular scale. The department has a strong commitment to structural studies that it wishes to expand in this area of investigation. The position will be open to candidates at the tenure-track entry level, as well as to more senior investigators.

Our department integrates biological structure with function through highly interactive collaborations between individual faculty members. We particularly encourage applicants who have a special desire to participate in and contribute to such an environment. We provide generous financial support and the equipment necessary to initiate strong research programs. The department Web site can be visited at:

http://biochemistry.hs.columbia.edu

Applications should include a CV and brief statement of research goals. Three or more letters of reference should be sent independently. Material should be mailed to: EM Search Committee, Biochemistry and Molecular Biophysics, Room 5-424, 630 West 168th Street, New York, NY 10032.

We take affirmative action toward equal employment opportunity.

TWO SABBATICAL REPLACEMENTS
Department of Chemistry and Biochemistry
Denison University

The Department of Chemistry and Biochemistry at Denison University invites applications for two one-year sabbatical replacement positions at the **ASSISTANT PROFESSOR** level to begin in August 2002 with the possibility of renewal for a second year. Position One will include teaching responsibilities in introductory chemistry and physical chemistry. Position Two will include teaching responsibilities in introductory and organic or biochemistry. The Department has excellent facilities, computer resources, and instrumentation for teaching and research in biochemistry and all areas of chemistry. Instrumentation is available for separations (GC/MS and other GC methods, HPLC, electrophoresis); spectroscopy (FT-NMR, FT-IR, UV-vis, fluorescence); and molecular modeling (SGI workstations) as well as surface microscopy, powder X-ray, and AA. Applicants should have earned a Ph.D. Postdoctoral experience is desirable. Send curriculum vitae, transcripts, a statement of teaching philosophy, and three letters of recommendation to: **Dr. Charles W. Sokolik, Department of Chemistry and Biochemistry, Ebaugh Laboratories, Denison University, Granville, OH 43023. E-mail: sokolik@denison.edu**. Information about the University and the Department is available at the University **website: http://www.denison.edu**. Our review of completed applications will begin March 1, 2002, and continue until the positions are filled. *Denison University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are especially encouraged to apply.*

FACULTY
Cell/Molecular Neuroscience

ASSISTANT/ASSOCIATE PROFESSOR (grant funded, leading to tenure track). The City College, City University of New York, Department of Biology, seeks a Neuroscientist, preferably working at the cell/molecular level, with strong independent research program and postdoctoral experience to teach doctoral and undergraduate courses. Successful applicants should have research interests that complement our neurobiology faculty (molecular genetics of signal transduction, visual cortical neurophysiology and neuroanatomy, bird-song learning, visual system development, visuomotor plasticity). Start-up funds, core facilities, and abundant space are available.

Application review begins immediately. Additional details at **websites: http://www.ccny.cuny.edu/positions** or **http://www.rfcuny.org/hr/pvn**. To apply, send curriculum vitae, statement of research interests, and contact information for three professional references to: **Dr. Tadmiri Venkatesh, Chair, Neuroscience Search Committee, Biology Department, City College, CUNY, Convent Avenue at 138th Street, New York, NY 10031. E-mail: venky@sci.ccny.cuny.edu**. *An Affirmative Action/Equal Opportunity/Americans with Disability Act/IRCA Employer.*

RESEARCH POSITIONS
Arizona Respiratory Center

Several research positions are available immediately at the University of Arizona, Arizona Respiratory Center, to pursue cutting-edge, NIH-sponsored research on the molecular genetics, immunology, and functional genomics of asthma and allergy in the laboratories of **Dr. F. Martinez, Dr. M. Halonen,** and **Dr. D. Vercelli.** Preference will be given to candidates who have a strong background in molecular biology and/or genetics and/or immunology and/or biochemistry and effective communication skills. For more information about the projects and laboratories, visit **website: http://www.respiratory.arizona.edu**. For information about job descriptions, minimum qualifications, and application procedures, visit **website: http://www.hr2.hr.arizona.edu**.

The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer; Minorities/Women/Disabled/Veterans.

POSITIONS OPEN

COMPUTATIONAL EVOLUTIONARY BIOLOGY/PHYLOGENETICS

The School of Computational Science and Information Technology (CSIT) at Florida State University seeks to fill three tenure-track positions in the general area of computational evolutionary biology. These positions are available at the rank of **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** and are defined broadly; we invite applications from Mathematicians, Statisticians, Computer Scientists, and Biologists whose research includes a strong conceptual, theoretical, or methodological component. Special emphasis will be placed on phylogenetic inference for two of the positions; the third will be in population genetics, genomics/proteomics, or related areas of computational biology and bioinformatics. We are especially interested in individuals who are interested in contributing to an interactive, collaborative research environment.

CSIT is a multidisciplinary, cross-departmental organization that strives to foster communication between Computational Scientists and consumers of computational methods in the natural and social sciences. We offer state-of-the-art computational facilities including a large IBM SP supercomputing cluster and an SGI/Onyx visualization system.

Interested applicants should submit curriculum vitae; statement of research interests; and the names, addresses, and telephone numbers of three references by March 1, 2002, to: **David Swofford, Chair, CEB Search Committee, CSIT, Florida State University, Tallahassee, FL 32306-4120.** Review of applicants will begin in February 2002 and will continue until the positions are filled.

Florida State University is an Equal Opportunity/Affirmative Action Employer.

The Center for Energy and Environmental Studies and the Department of Geography seek candidates for a position at the rank of **ASSISTANT PROFESSOR** in the areas of environmental policy and/or management. The candidate should have a Ph.D. in a related field such as geography, economics, business, or environmental studies. Candidates should have appropriate analytical skills to examine the interface between decision making by individuals or firms and compliance with environmental regulations or the management of natural resources. Candidates with experience in the private and/or government sector are encouraged to apply. Opportunities exist for collaboration with colleagues in ecological economics, transportation, energy modeling, environmental science, and Third-World development. Applicants should submit curriculum vitae, a statement of teaching and research interests, and three letters of recommendation to: **Cutler Cleveland, Search Committee Chair, Department of Geography, Boston University, 675 Commonwealth Avenue, Boston, MA 02215-1401**. Review of applicants will begin on January 31, 2002. *Boston University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, ECOLOGY
Mount Saint Mary's College

Applications are invited for a tenure-track faculty position beginning August 2002 from recent Ph.D.s dedicated to quality undergraduate education at a Catholic liberal arts college. Specialization in either animal or plant ecology is acceptable but applicants must be able to teach a general ecology course along with other upper-level field biology electives. A willingness to participate in an interdisciplinary sequence of courses for nonmajors is also expected. Excellence in teaching and the ability to direct undergraduate research are essential. Please send a cover letter, a statement of teaching philosophy and research interests, curriculum vitae, undergraduate and graduate transcripts, and three letters of recommendation to: **Dr. David W. Bushman, Department of Science, Mount St. Mary's College, Emmitsburg, MD 21727** by 15 February 2002. For additional information, **e-mail: bushman@msmary.edu**; **website: http://www.msmary.edu**. *Equal Opportunity Employer.*

POSITIONS OPEN

PROFESSOR AND CHAIR
DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY
Morehouse School of Medicine

Morehouse School of Medicine invites applicants for a faculty and Chair position at the **ASSOCIATE/FULL PROFESSOR** rank. The successful applicant will chair the Morehouse School of Medicine Department of Pharmacology and Toxicology. The Department consists of eight full-time faculty members with extramural research funding totaling over $1 million for fiscal year 2001. Responsibilities for the Chair include administration of the Department to achieve institutional goals with respect to excellence in teaching, research, and service. Responsibilities for the Department include teaching of medical student curriculum, teaching of graduate students in the Ph.D. program in biomedical sciences, and service responsibilities. The successful applicant should have a solid research/publication record in pharmacology and toxicology and a record of successful competition for grant funding including R01 or equivalent grants. A track record in mentoring minority students, Fellows, and faculty is desirable.

Preference will be given to individuals with research interests involving cancer, as the successful applicant may be eligible to compete for appointment as a Georgia Distinguished Cancer Scientist. Individuals with other research interests will also be considered. Interested applicants should send curriculum vitae and a letter of interest by January 30, 2002, to:

Dr. Gerald Sonnenfeld
Chair, Pharmacology and Toxicology Search Committee
Morehouse School of Medicine
720 Westview Drive, S.W.
Atlanta, GA 30310

Morehouse School of Medicine is an Equal Opportunity Employer.

ANIMAL PHYSIOLOGIST/BIOCHEMIST

Washington College's Department of Biology is readvertising an entry-level, tenure-track faculty position at the rank of **ASSISTANT PROFESSOR** beginning August 2002. Candidates must possess a Ph.D. A strong commitment to teaching and the development of a research program with undergraduate involvement is required. Teaching responsibilities include biochemistry, animal physiology, vertebrate anatomy, and introductory biology. There is an opportunity to offer an advanced class in an area of interest. Environmental focus desirable. Washington College, a selective college of 1,200 students, is located on a tributary of the Chesapeake Bay and orients much of its scientific research toward investigating problems associated with the Chesapeake Bay ecosystem. The college is within easy driving distance to Washington D.C., Baltimore, Maryland, and Philadelphia, Pennsylvania. Send curriculum vitae; statements of teaching and research interests; undergraduate and graduate school transcripts; and three current reference letters by December 1, 2001, to: **Dr. Rosemary H. Ford, Chair, 300 Washington Avenue, Chestertown, MD 21620**. Review of applications will begin February 8, 2002. *Washington College is an Equal Opportunity Employer. Women and minorities are especially encouraged to apply.*

RHEUMATOLOGY RESEARCHER/ASSISTANT PROFESSOR. Top academic research institution in the Manhattan area needs an M.D./Ph.D. with excellent clinical training in internal medicine and rheumatology and also extensive research experience in immunology. *The candidate needs to have had previous academic appointments at the Assistant Professor of medicine level in the United States.* He/she must have demonstrated ability to obtain independent funding for his/her research and be at the present time the Investigator of at least one funded research project. Must be proficient in cell biology, immunology, protein chemistry, molecular biology, and laboratory animal handling. FAX résumé to: **212-598-6449, Attention: Jill P. Buyon, M.D.**

NATIONAL CANCER INSTITUTE

TENURE TRACK POSITION
LABORATORY OF CELLULAR AND MOLECULAR BIOLOGY

The Laboratory of Cellular and Molecular Biology (LCMB), Center for Cancer Research, of the National Cancer Institute, National Institutes of Health (http://rex.nci.nih.gov/RESEARCH/basic/lcmb/labcellbio.htm) has a long tradition of excellence in the investigation of signal transduction pathways involved in both normal cellular function and malignant transformation. The Laboratory now invites applications for a tenure track position to study the Cell Biology of Signal Transduction. The applicant should have the potential to develop an independent basic research program in cellular and molecular biology, with emphasis on understanding basic signal transduction processes. This position is available for a Ph.D, M.D., or M.D., Ph.D. with a salary commensurate with education and experience.

A one or two-page statement of research interests and goals should be submitted in addition to three letters of recommendation and a curriculum vitae to: **Ms. Michelle Porturica, Executive Secretary, Laboratory of Cellular and Molecular Biology, CCR, NCI, Building 41, Room A101, Bethesda, MD 20892-5055; phone: 301-435-2515. Fax: 301-435-2779, email: porturim@dce41.nci.nih.gov**

Candidates must be U.S. citizens or permanent residents. NIH Tenure track investigators with educational debts may be eligible for the NIH Loan Repayment Program. Applications to be post-marked by March 25, 2002.

The NCI is an Equal Opportunity Employer.

Mouse Developmental Biology Postdoctoral Fellowship

Perry J. Blackshear, M.D., D. Phil.

A position is available for a Mouse Developmental Biologist with experience in knockout approaches to central nervous system development. Candidates should have experience in ES cell culture and manipulation, and their use in generating chimeric mice. Candidates should also have experience in studying the development of the mouse central nervous system, including routine histology and immunohistochemistry techniques, in situ hybridization histochemistry, and general techniques of molecular biology and protein chemistry. The focus of the proposed studies will be on the involvement of the MARCKS family of protein kinase C substrates in central nervous system development and signaling. The successful candidate will participate in a collaborative effort between Drs. Perry Blackshear and Yuji Mishina at NIEHS.

Applicants should have a Ph.D. and/or M.D. with no more than 5 years of post-doctoral experience. Curriculum vitae, description of recent research work, and three letters of recommendation should be sent by March 11, 2001, to:

Dr. Perry Blackshear, Laboratory of Signal Transduction, A2-05 National Institute of Environmental Health Sciences,111 Alexander Drive, Research Triangle Park, NC 27709, USA. Fax 919-541-4571; email black009@niehs.nih.gov

NIEHS NATIONAL INSTITUTES OF HEALTH

NIH/NIEHS is an Equal Opportunity Employer

Psychiatric Genomics, Inc.

Psychiatric Genomics, Inc., a rapidly growing genomics research firm, based in the Washington, DC area, is working to discover novel targets and treatments for CNS diseases such as Bipolar disorder, Schizophrenia and Autism. As we expand our efforts, we are seeking candidates for the following positions:

DIRECTOR, CHEMISTRY AND DRUG OPTIMIZATION

This person will lead optimization of compounds discovered by the high throughput screening program, initially by managing contract synthesis focused on molecules and libraries with "drug-like" characteristics; Chemoinformatics and molecular modeling capability to support SAR generation, lead expansion, compound synthesis and HTS library selection; Analytical capability to support synthesis and ADME/PK; Organic synthesis capability and analytical tools for support of discovery and pre-clinical research. The successful candidate will be required to conduct the lead optimization work initially through contract synthesis and should therefore have had experience in the evaluation, selection, and management of CROs. The candidate should have experience in organic synthesis and computational methods and should have demonstrated the capability of building and directing a group of chemists in a project-team-oriented multidisciplinary environment.

DIRECTOR/SR. SCIENTIST, NEUROGENETICS

This position is integral to the translation of gene discoveries into our drug discovery platforms. The successful candidate will mine gene expression data from human brain tissue, identify biological pathways of drug action and CNS disease, relate these pathways to established models of CNS pharmacology based on human cell and animal studies, and create novel screening models for drug discovery. The successful candidate will have an extensive knowledge of the pharmacology of CNS drugs and the neurobiology of psychiatric diseases. Experience with large datasets and using bioinformatic tools to develop and test hypotheses in a biotechnology or pharmaceutical environment are a plus.

SCIENTIST, HIGH THROUGHPUT SCREENING, ASSAY DEVELOPMENT

This person will be responsible for primary data management, data analysis, and report generation in applying novel technologies to high throughput screening, including initial assay development, validation, and transfer to automated systems as well as following the assay through the HTS cycle. Candidates must be creative and able to develop novel cell-based, enzymatic or binding assays. Experience with HTS workstations and automation as well as data management software (e.g., Activity Base) is strongly preferred.

SR. RESEARCH ASSOCIATE, *IN VIVO* TARGET VALIDATION USING MICROARRAY

This person will model and evaluate psychiatric drug treatments in animals and support the analysis of these *in vivo* projects using RNA detection by microarray technologies. Required skills include: drug dissolution, chronic drug administration to rodents, brain tissue dissection, mRNA isolation, labeling, and hybridization, analysis of large data sets, and a working knowledge of statistics. Knowledge of immunocytochemistry, image analysis, or microscopy is a plus.

RESEARCH ASSOCIATE, MIRCOARRAY, REAL-TIME-PCR

This person will head our core Real-Time-PCR program for gene expression validation, responsible for performing validation studies on genes identified from our gene expression profiling platforms. In addition, this individual will work with other groups to develop quantitative PCR-based assays for use in gene and drug discovery. Experience in nucleic acid purification, microarray hybridizations and analysis is strongly preferred. To be considered for all of the above positions, you should have earned an advanced degree and have several years of similar experience in a relevant field. Please send your resume and salary requirements to: **Psychiatric Genomics, Inc., Human Resources, 19 Firstfield Road, Gaithersburg, Maryland 20878, Fax: 301 556-1350, e-mail: hr@psygenomics.com.**

EOE M/F/H/V

TENURE-TRACK FACULTY POSITION
Biological Physics
University of Missouri–Columbia

The Department of Physics and Astronomy at the University of Missouri-Columbia (MU) seeks an outstanding candidate for a tenure-track faculty position in experimental biological physics starting September 1, 2002. The successful candidate will be part of the already existing group of four Biological Physicists of international reputation in the Department. We anticipate hiring at the level of **ASSISTANT PROFESSOR**, but exceptionally qualified candidates will be considered for a higher rank. The position requires a Ph.D. and postdoctoral experience and applications are invited from all areas of experimental biological physics. The successful candidate is expected to establish a strong, externally funded research program; to be committed to excellence in teaching at all levels; to contribute to the Department's aggressive effort to build a multidisciplinary, nationally visible Center for Biological Physics at MU; and to collaborate with other Life Scientists at MU. More information about our department and the life sciences is available at **website: http://www.missouri.edu/~physwww/physics.html**. Candidates should submit curriculum vitae, description of research plans, and arrange for three letters of recommendation to reach: **Biological Physics Search Committee, Department of Physics and Astronomy, University of Missouri, Columbia, MO 65211. Telephone: 573-882-3335; FAX: 573-882-4195; e-mail: ceas@missouri.edu**. Applications will be accepted until the position is filled. To ensure full consideration, applications should be received by January 31, 2002. *The University of Missouri is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply. To request ADA accommodations, please contact our ADA Coordinator at 573-884-7278, e-mail: V/TTY@missouri.edu.*

BIOLOGY DEPARTMENT
Rensselaer Polytechnic Institute

The Rensselaer Biology Department seeks outstanding candidates for a **TENURE-TRACK FACULTY POSITION** as part of a major expansion program in biotechnology and life sciences. We seek an outstanding and original Researcher investigating central and fundamental processes related to development at all levels of biological organization. Among these processes are the initiation of patterning, the control of morphogenesis, and the elucidation of signal transduction networks controlling developmental events. Candidates should be active and have good potential for sponsored research. The successful candidate will be expected to play a major role in our new systems biology program and to interact with colleagues in Rensselaer's tissue engineering initiative. Salary and start-up packages will be competitive. Exciting opportunities exist for collaboration through cooperative programs with neighboring institutions such as the NYS Health Laboratories.

Review of applications begins February 15, 2002. Later applications will be considered. Send curriculum vitae, statement of research and teaching interests, publication list, and names of three references to: **Ms. Jan MacDonald, Assistant to the Chair, Biology Department, 1W14 SC, 110 Eighth Street, Troy, NY 12180-3590**. For additional information about the campus and local area, visit the Rensselaer **website: http://www.rpi.edu**. *Rensselaer Polytechnic Institute is an Equal Opportunity/Affirmative Action Employer. Members of underrepresented groups (including people of color, persons with disabilities, and women) are strongly encouraged to apply.*

The Curriculum in Ecology (**website: http://www. unc.edu/depts/ecology**) and the Carolina Environmental Program (**website: http://www.cep.unc.edu**), University of North Carolina at Chapel Hill, jointly seek to hire two **ASSISTANT PROFESSOR** tenure-track positions: (1) an Ecologist and (2) Ecological/Environmental Economist. A full description of the positions and application procedures is available at the listed websites. Review of applications begins February 28, 2002. *Equal Opportunity/Americans With Disabilities Act Employer.*

POSITIONS OPEN

INTEGRATIVE/COMPARATIVE ANIMAL PHYSIOLOGY
SEARCH EXTENDED
University of North Texas, Denton, Texas

The Department of Biological Sciences (**website: http://www.biol.unt.edu**) invites applications for a tenure-track/tenured position beginning in September 2002. An active researcher at the rank of **ASSISTANT** or **ASSOCIATE PROFESSOR** is sought. The Department offers excellent opportunities to interact with funded research faculty in the areas of evolutionary and developmental physiology and neuroscience. Teaching responsibilities will involve developing a course in comparative physiology for biology majors and graduate courses appropriate to the faculty member's speciality.

Located in the Dallas-Fort Worth metroplex, the University of North Texas is a growing institution with an enrollment of approximately 28,000 students. The Department is rapidly growing and has a strong research focus. Excellent research facilities and competitive salary and start-up funds are available. The Department offers undergraduate and graduate (M.S./Ph.D.) degrees in biology, biochemistry, molecular biology, and environmental science. Submit curriculum vitae, names of three references, and statement of research goals to:

Earl G. Zimmerman, Chair
Department of Biological Sciences
P.O. Box 305220
University of North Texas
Denton, TX 76203-5220

Review of applications will begin immediately and continue until a suitable candidate is chosen.

The University of North Texas is an Equal Opportunity/Affirmative Action Institution committed to diversity in its Employment and educational programs, thereby creating a welcoming environment for everyone.

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 cell biology, 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: http://www.phri.org**. Applications should be sent to: **Dr. Leonard Mindich, Chairman, Recruitment Committee, Public Health Research Institute, 455 First Avenue, New York, NY 10016**. *The Public Health Research Institute is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION in prostate cancer research to investigate signal transduction and tumor suppressor pathways. A background in molecular and cellular biology required. Send curriculum vitae and names of three references to: **Dr. Young E. Whang, Lineberger Cancer Center, CB Number 7295, University of North Carolina, Chapel Hill, NC 27599-7295. FAX: 919-966-8212; e-mail: ywhang@med.unc.edu**.

POSITIONS OPEN

CHAIRPERSON
Department of Biochemistry and Molecular Biology

The University of Kansas School of Medicine is searching for an outstanding Scientist and leader to chair the Department of Biochemistry and Molecular Biology. Candidates must have a vibrant research program, preferably with an emphasis on protein structure/function and use of biochemical approaches to address biological function and regulation; strong leadership abilities; and a commitment to graduate and medical education. The new Chair will be expected to continue to foster interactions with other departments in the Medical School, which has an unusually open and collaborative environment, and participate in forging research partnerships with other institutions in the Kansas City area. Substantial laboratory space and resources are available for this important position including numerous new faculty positions with highly competitive recruitment packages. Nominations are invited. Applicants should forward their curriculum vitae, a brief statement regarding research and academic leadership goals, and contact information for three references to:

Ms. Jo Halverson
Special Assistant to the Executive Dean
3015 Murphy Administration Building
University of Kansas School of Medicine
3901 Rainbow Boulevard
Kansas City, KS 66160-7300
E-mail: jhalvers@kumc.edu
Website: http://www.kumc.edu

The review of applications will begin immediately upon receipt and continue until the position is filled.

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

ASSISTANT PROFESSOR OF BIOLOGY
College of Science, Grand Canyon University

The Department of Biology seeks a broadly trained applicant for a tenure-track faculty position. A strong commitment to undergraduate teaching and advising and a Ph.D. are required. Teaching duties include introductory anatomy and physiology, pathophysiology, and human gross dissection. Grand Canyon University, a private, independent Christian university, is located in Phoenix, Arizona, and draws students nationally and internationally. Salary commensurate with qualifications. Applications are accepted until position is filled. Starting date August 20, 2002. Applicants should forward curriculum vitae, a completed GCU application form (available upon request or downloadable at **website: http://www.grand-canyon.edu/personnel/fac_app.htm**), and three letters of recommendation to: **Dr. James Tuohy, Search Committee Chair, Department of Biology, College of Science, Grand Canyon University, 3300 West Camelback Road, P.O. Box 11097, Phoenix, AZ 85061-1097. Telephone: 602-589-2514.** *Grand Canyon University is an Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS
University of Virginia

Two Postdoctoral positions available immediately to investigate protein-protein, protein-surface, and cell-surface interactions with applications to cell sorting and functional characterization, high-throughput screening strategies, and targeted drug and gene delivery. Candidates should have a Ph.D. in chemical engineering, chemistry, or a related engineering or biological field. Experience with recombinant DNA techniques relevant for protein modification is desirable. Applicants should send curriculum vitae and names of three references to: **Michael B. Lawrence, Ph.D., Associate Professor, Biomedical Engineering, University of Virginia, P.O. Box 800759, Charlottesville, VA 22903. E-mail: mbl2a@virginia.edu**.

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

UNIVERSITY OF DELHI
SOUTH CAMPUS
BENITO JUAREZ ROAD, NEW DELHI – 110 021

Advt. No.: UDSC/Estab./21/2001 **Dated:12.12.2001**

Applications are invited on the prescribed forms for the following posts so as to reach the Deputy Registrar, University of Delhi South Campus, Benito Juarez Road, New Delhi – 110 021latest by 15.01.2002

Sl. No. — Department,Designation and No. of posts

1. APPLIED OPERATIONAL RESEARCH
Reader(1)*
Desirable Qualification : Industrial/Business Problems.
Lecturer(1)*
Desirable Qualification : Computer applications to operational research problems.

2. ELECTRONIC SCIENCE
Professor(1)
Desirable Qualification : Specialisation in Microwave Engineering/CAD for Microwaves
Professor(1),Reader(1),Lecturer(1#)
Desirable Qualification: Microwave Engineering with knowledge of Microwave Circuits, MIC and CAD for Microwaves/ Electromagnetics & Antenna / Computer Engineering / Microprocessors / Digital Signal Processing / Materials and Devices / Communication Electronics / Optical Electronics.

3. BIOCHEMISTRY
Professor(1)*
Desirable Qualification : Cell Biology / Virology / Immunology.
Reader(1)*
Desirable Qualification : Structural Biology / Immunology.
Lecturer(1)
Desirable Qualification : Proteins / Recombinant DNA / Immunology

4. BIOPHYSICS
Professor(1), Reader(1), Lecturer (1)
Desirable Qualification for all the positions : Molecular modeling / Structural Biology / Membrane biophysics / Bioinformatics / *in silico* biology.

5. GENETICS
Professor(1), Reader(1*)*
Desirable Qualification: Any area of Genetics and Genomics.
Lecturer(1)
Desirable Qualification : Quantitative methods in Genetics / Population Genetics.

6. MICROBIOLOGY
Reader(1)*
Desirable Qualification : Molecular Genetics/ Recombinant DNA Technology / Genetic Engineering.
Reader(1)
Desirable Qualification : Virology / Molecular Virology.

7. PLANT MOLECULAR BIOLOGY
Professor(1), Reader(2), Lecturer(2)*
Desirable Qualification for all the positions : Regulation of gene expression / Stress Molecular Biology / Biotechnology / Biochemistry and Metabolic Engineering / Structural and Computational Biology.

For detailed information please visit http://www.iic.ac.in or contact Deputy Registrar, UDSC

DEPUTY REGISTRAR

ASSISTANT PROFESSOR OF COMPUTATIONAL BIOLOGY
Computational Biology/Bioinformatics

The Department of Biology, University of Dayton, invites applications for a tenure-track Assistant Professor position. We seek an individual with primary teaching and research interests in computational biology/bioinformatics. Required: Ph.D., strong computational background, and demonstrated commitment to teaching and research. Postdoctoral experience is desirable. The subject area of research is open but candidates are expected to apply computational methods to address fundamental biological questions. The candidate is expected to develop a funded research program involving Ph.D., M.S., and undergraduate students as well as to collaborate with existing faculty on the computational aspects of their research. Start-up funds are available to establish a dry laboratory in the candidate's area of expertise. The teaching expectation will be one lecture course per semester as well as supervision of the laboratory component. To apply, send curriculum vitae, statements of research direction and teaching interests, selected reprints, and at least three letters of recommendation. Applications received by February 1, 2002, will be given full consideration. Address all correspondence to: **Dr. Jayne B. Robinson, Chair, Bioinformatics Search Committee, Department of Biology, University of Dayton, 300 College Park, Dayton, OH 45460-2320.**

The University of Dayton is a private university located in the Dayton-Cincinnati (Ohio) metroplex area. The Department of Biology is committed to excellence in research and teaching. Please visit our **website: http://biology.udayton.edu** for further information.

The University of Dayton is an Affirmative Action/Equal Opportunity Employer. Women, minorities, individuals with disabilities, and veterans are strongly encouraged to apply. The University of Dayton is firmly committed to the principle of diversity.

ENVIRONMENTAL STUDIES

Central College invites applications for a tenure-track position as **ASSISTANT** or **ASSOCIATE PROFESSOR** to begin August 2002. Qualifications: Ph.D. in Earth science, geology, physical science, geography or a related field; a commitment to excellence in teaching and to engaging students in an active research program; and experience or sincere interest in coordinating an interdisciplinary Environmental Studies program. Candidates with teaching and program coordination experience will be given preference.

Teaching responsibilities include physical geography, geology, geographic information systems, environmental science, the interdisciplinary senior capstone seminar and science courses for nonmajors. The successful candidate will be encouraged to develop additional course offerings in their interest areas for majors and nonmajors.

Candidates should send a letter of application, curriculum vitae, one-page statement of teaching philosophy, copies of undergraduate and graduate transcripts, and names and contact information for three references to: **Dr. Paul Naour, VPAA, Central College, Pella, IA 50219.** Additional information is available at **website: http://www.central.edu.** Review of applications will begin on February 15, 2002, and continue until the position is filled. *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION is available to study the regulation of T lymphocyte activation. Projects focus on the role(s) of CD45 and CD4 during T cell activation and differentiation into Th1 and Th2 cell subsets. An individual with a Ph.D., M.D., or equivalent and previous experience in molecular biology, biochemistry, and/or cellular immunology is required. To apply, send or e-mail curriculum vitae and names of three references to: **Dr. David Leitenberg, Department of Immunology, George Washington University, Ross Hall 411, 2300 Eye Street, N.W., Washington, DC 20037. E-mail: dleit@gwu.edu; FAX: 202-994-9420.**

POSITIONS OPEN

FACULTY POSITIONS

The Baylor College of Medicine, Department of Medicine, Section of Infectious Diseases, is seeking outstanding, full-time, research-oriented faculty members for tenure-track appointments at the **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** of medicine levels. Candidates must have M.D., Ph.D., or M.D./Ph.D. degree(s) and a track record or high likelihood of obtaining external funding. Particularly desirable areas of research expertise include but are not limited to bacterial pathogenesis, innate immunity, and HIV-1/AIDS health services research.

Successful candidates will receive attractive start-up packages. Salaries will be commensurate with qualifications and expertise. Applications will be accepted until all positions are filled.

Interested individuals should send curriculum vitae and three references to:

David J. Tweardy, M.D.
Chief, Section of Infectious Diseases
Department of Medicine
Baylor College of Medicine
One Baylor Plaza, BCM 286, Room N1319
Houston, TX 77030

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

TENURE-TRACK ASSISTANT/ASSOCIATE PROFESSOR POSITIONS IN GENETICS

The Department of Genetics at Louisiana State University Health Sciences Center in New Orleans invites applications for tenure-track faculty positions at the Assistant or Associate Professor levels to enhance growth and expansion in human genetics, genomics/bioinformatics, and genetic epidemiology. Exciting opportunities for collaborative, interdisciplinary research exist through LSU Centers of Excellence in cancer, neuroscience, oral biology, and cardiovascular biology as well as the Louisiana Gene Therapy Consortium and the Kresge Hearing Research Laboratory. Successful candidates will enjoy excellent space and state-of-the-art equipment and core facilities. Requirements are postdoctoral experience and the ability to establish an extramurally supported research program. Contributing to the graduate and medical teaching activities of the Department is expected. Please send curriculum vitae, description of research interests, and addresses of three references to: **Bronya Keats, Ph.D., Department of Genetics, LSU Health Sciences Center, 533 Bolivar Street, New Orleans, LA 70112.** *LSUHSC is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL OPPORTUNITY. PNCERS **(website: http://www.pncers.org)** is seeking a creative, enthusiastic, hardworking team player to fill a one- to two-year **POSTDOCTORAL FELLOWSHIP** position designing and testing physical, biological, and socioeconomic indicators of estuarine system health in West Coast estuaries. The successful applicant should have quantitative skills necessary to perform exploratory multivariate analyses, field experience in estuarine and/or coastal systems, a sincere interest in the multidisciplinary approach, and the ability to work independently. Interested candidates should send a letter of interest, curriculum vitae, and names and contact information of three references to: **Julia K. Parrish, SAFS Box 355020, University of Washington, Seattle, WA 98195-5020.** Review of applications will begin 21 January 2002 and continue until the job is filled. *The University of Washington is building a culturally diverse faculty and strongly encourages applications from female and minority candidates. The University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

UNIVERSITY OF MARYLAND, BALTIMORE
Department of Biochemistry and Molecular Biology

A tenure-track position of **ASSISTANT PROFESSOR** is available in the Department of Biochemistry and Molecular Biology at the University of Maryland, Baltimore, School of Medicine. An Associate Professor position may be considered for qualified candidates. The Department sustains a highly diversified research program with over $8 million in annual grant support and includes NIH- and NSF-funded Centers such as the Center for Fluorescence Spectroscopy (CFS) and the Nuclear Magnetic Resonance Spectroscopy Center. The Department also provides NIH-funded training in muscle biology as well as graduate programs in both biochemistry and cell and molecular biology.

The successful candidate will be expected to establish an independent research program in biochemistry; expand the application of fluorescence spectroscopy to the study of proteins, proteomics, and/or molecular genetics; and serve as Deputy Director of the CFS. Involvement with the Department's teaching responsibilities in both the medical school and graduate courses is expected.

Inquiries including curriculum vitae, a statement of research interests, representative reprints, and names and addresses of at least three references should be sent to: **Dr. Peter Melera, Ph.D., Professor and Chair of the Search Committee, Biomedical Research Facility, 108 North Greene Street, Baltimore, MD 21201.** *Equal Employment Opportunity/Affirmative Action Employer; Minorities/Females/Disabled/Veterans.*

NEUROSCIENCE OPEN-RANK TENURE-TRACK FACULTY APPOINTMENT
Northwestern University

The Departments of Neurological Surgery, Physiology, and the Northwestern University Institute for Neuroscience (NUIN) announce a search for a full-time, tenure-track faculty appointment at the Medical School. Outstanding candidates employing innovative approaches to cerebrovascular biology or ischemic cascade/neuroprotection are encouraged to apply. Recently renovated laboratories are available. The appointee will have access to shared facilities for MRI, tissue culture, cell imaging, transgenic and knockout projects, monoclonal antibodies, gene microarrays, structural biology, and biotechnology. The appointee is expected to establish an independently funded research program and participate in graduate and medical school teaching.

Applicants must include (1) current curriculum vitae and list of publications, (2) brief statement of research interests (three pages or less), and (3) three letters of reference sent on their behalf to: **Cerebrovascular Search Committee, NUIN, Searle 5-474, 320 East Superior Street, Chicago, IL 60611-3010.** Completed applications must be received by February 28, 2002. Appointment will commence on or after July 1, 2002.

The Northwestern University is an Affirmative Action/Equal Opportunity Employer. Hiring is contingent upon eligibility to work in the United States. Women and minorities are especially encouraged to apply.

POSTDOCTORAL FELLOWSHIPS

Several Postdoctoral positions (Ph.D. or M.D.) are available for motivated young Scientists in the Molecular Medicine Program in the Department of Medicine, University of California, Irvine. The laboratories of **Professors Bogi Andersen, Steven M. Lipkin,** and **Ping H. Wang** are using targeted gene ablation in mice, DNA microarrays, and mammalian genomics to study signal transduction, transcriptional regulation, and genomic stability in the development of cardiac disease, endocrine disease, epidermal development, and genetic susceptibility to cancer/infertility. Please send curriculum vitae to: **Ping H. Wang, M.D., Molecular Medicine Program, Med Sci I, C240, University of California, Irvine, CA 92697. E-mail: phwang@uci.edu.**

Post-Doctoral Positions
Laboratory of Biochemical Genetics
National Heart, Lung, and Blood Institute
National Institute of Health

Post-doctoral positions are available immediately in the Laboratory of Biochemical Genetics, NHLBI. The research focuses on adeno-associated virus (AAV). Gene therapy positions are available in the area of recombinant AAV vector development and applications. We have recently developed a novel and efficient vector production method for recombinant AAV that is highly scalable. Developing downstream processing of large quantities of rAAV serotypes 2, 4, and 5 is now necessary. Post-doctoral positions are available to establish vector processing procedures and support gene therapy applications.

Post-doctoral positions are available for projects involving virus-cell interactions. The effect of AAV non-structural proteins (Rep) on the cell is an exciting area of research and has recently allowed us to identify an interaction with cyclic AMP dependent protein kinases. Expression of Rep in some cells is extremely cytotoxic and we recently demonstrated that several functional domains of Rep contribute to the overall cytotoxic affect. Please contact:

Robert M. Kotin
NHLBI, NIH,
Building 10, Room 7D18
10 Center Drive
Bethesda, MD 20892
kotinr@nhlbi.nih.gov

NIH is an Equal Opportunity Employer

PHYSICIAN OR SCIENCE ADMINSTRATOR
($63,211 TO $97,108)

The Lung Biology and Disease Program, Division of Lung Diseases, National Heart, Lung, and Blood Institute, NIH is seeking a Physician or Health Scientist Administrator to direct and manage a national program in pulmonary vascular and critical care medicine. The individual selected will provide leadership in administration of research grants, preparing reports of scientific progress, and identifying opportunities for future research in pullmonary vascular diseases and acute lung injury. Essential qualifications are: an M.D. or Ph.D. in health sciences; scientific knowledge and research experience in one or more of the following areas: Pulmonary and critical care medicine and biology, inflammatory disease, genetic medicine, transplantation biology and medicine, pulmonary embolism, sepsis, the Acute Respiratory Distress Syndrome; and the ability to communicate and work with others. U.S. citizenship required. Appointments may be made at GS-13/14 grades depending on qualifications. A Recruitment/Relocation Bonus may be considered; a Physician Comparability Allowance (PCA) up to $20K per year may also be considered. Excellent health, life, investment, and personal leave benefits. Submit a cover letter, CV and publications to NHLBI Human Resources Branch, Building 31, Room 5A28, Attention: Ms. Rene Edwards, Announcement #HL-01-0155, National Institutes of Health, Bethesda, MD 20892-2484, tel 301-496-6477 by close of business 1/31/02. If currently a Federal employee, optional form OF 612 is acceptable along with a copy of your SF 50. Visit the http://careerhere.nih.gov website using #HL-01-0155. For additional professional information contact (Dr. Dorothy Gail (301) 435-022).

National Heart, Lung, and Blood Institute

The National Institutes of Health is an equal opportunity employer

LumiCyte

VP OF PROTEOMICS AND DISCOVERY

LumiCyte, Incorporated, a biotechnology leader focused on developing revolutionary new products and services to detect and monitor disease, seeks to hire a Vice President of Proteomics and Discovery. The successful candidate will have an opportunity to lead LumiCyte's human protein discovery by developing a comprehensive map of proteins in biofluids such as human serum and plasma, using advanced, proprietary technologies developed by LumiCyte. These include LumiCyte's proprietary SELDI protein biochip, informatics and BioPhore Knowledgbase ™ technologies, all of which radically accelerate the identification of changes in protein profiles commonly associated with disease onset, disease progression, and response to therapy. The individual will oversee the strategy, planning and development of LumiCyte's innovative protein mapping efforts and collaborate with national and international centers of clinical excellence.

The position requires a highly motivated, world-class senior scientist (Ph.D. in life sciences is required) with a minimum ten years of leadership and executive expertise in protein discovery, protein characterization, protein chemistry, and assay development. The candidate must have outstanding academic credentials and proven success at a leading biotechnology, pharmaceutical, or diagnostics company with global reach.

LumiCyte is a pre-IPO, well-funded biotechnology company that is leading a healthcare revolution by creating products and services doctors and their patients can use to detect and monitor disease. LumiCyte integrates proprietary proteomics and informatics technologies in service to pharmaceutical and biotechnology companies with drugs in development. Interested? Send your curriculum vitae to: **kmeyer@lumicyte.com FAX: 510-226-4901 Attn: Katrena Meyer 510-413-9262. Lumicyte is located at 48480 Lakeview Blvd. Fremont, CA 94538 or visit www.lumicyte.com**

Lumicyte is an Equal Opportunity Employer

Tenure-Track Position
Cardiovascular Developmental Biology

The Laboratory of Developmental Biology in the Laboratory Research Program of the National Heart, Lung, and Blood Institute is seeking a developmental biologist to direct an independent research program in cardiovascular developmental biology. The candidate may have a Ph.D., M.D., or both, and have an outstanding record of research accomplishments as evidenced by publications in major peer reviewed journals. A broad scope of research interests is encouraged and particularly desirable is expertise in the use of multiple imaging modalities or the application of genomic and/or proteomic approaches in the study of cardiovascular development. This position is associated with several supporting core facilities including mouse transgenics, confocal and electron microscopy, multi-modality small animal non-invasive imaging, iRNA resources, and genomics and proteomic support. The position is tenure-track, and will be supported for up to 6 years before consideration for tenure.

The successful candidate will be offered a competitive salary commensurate with experience and qualifications. Appointees must be US citizens, resident aliens, or nonresident aliens with a valid employment visa. Applications must be received by **January 15, 2002**. Please submit a curriculum vitae and brief statement of research interests along with three letters of reference to:

Ms. Kim Westervelt
Human Resources Office
National Heart, Lung and Blood Institute
31 Center Drive, MSC 2484
Building 31A, Room 5A28
Bethesda, MD 20892-2484

Please include vacancy identifier, HL-01-0152, on ALL correspondence. The NIH is an Equal Opportunity Employer. Applications from women, minorities, and persons with disabilities are strongly encouraged. The NHLBI/NIH is a smoke-free workplace.

ASSISTANT PROFESSOR OF ENVIRONMENTAL EDUCATION
The Department of Biology
August 2002

The Department of Biology at Shippensburg University is seeking candidates for a tenure-track position in environmental biology. Responsibilities include teaching field biology, introductory biology courses, and an upper-level course in candidate's specialty. Willingness to teach environmental education practicum and assist in supervision of student teachers preferred. Scholarly activity will be required in the area of the candidate's specialty. Competitive salary and excellent benefits package.

Doctoral degree from an accredited institution required by June 30, 2002. The successful candidate will be expected to have a strong commitment to undergraduate instruction. College or secondary teaching experience preferred. A successful demonstration of teaching effectiveness and a scholarly seminar will be required as part of the on-campus interview. *All candidates must furnish proof of eligibility to work in the United States upon appointment.*

Qualified candidates should send curriculum vitae, official undergraduate and graduate transcripts, a statement of teaching philosophy and research interests, and three letters of reference to: **Environmental Biology Search Committee, Department of Biology, Shippensburg University, 1871 Old Main Drive, Shippensburg, PA 17257-2299**. Visit our **website: http://www.ship.edu**.

Review of applications will begin January 15, 2002, and will continue until the position is filled. *Shippensburg University is an Equal Opportunity Employer.*

ASSISTANT PROFESSOR
Reproductive/Developmental Biology
University of Pennsylvania

The Department of Animal Biology at the University of Pennsylvania is soliciting applications for a tenure-track faculty position at the Assistant Professor level. The Department has a strong commitment to basic biomedical research and is located at the heart of Penn's Philadelphia campus in an interactive scientific environment. Outstanding candidates with research interests in gamete biology are encouraged to apply. We are particularly interested in Scientists investigating metabolic regulation and signaling during spermatogenesis. Applicants must have a Ph.D., and/or V.M.D. degree along with postdoctoral training and should be prepared to establish an independent, extramurally funded research program and to interact with existing research centers at Penn. Applicants are expected to participate in teaching in the Department and in universitywide graduate programs.

Interested candidates should submit curriculum vitae, a statement of research interests, and three letters of reference to: **Ms. Judy Bennett, Search Committee Coordinator, University of Pennsylvania School of Veterinary Medicine, 3800 Spruce Street, Philadelphia, PA 19104-6046. FAX: 215-573-6810; e-mail: jbennett@vet.upenn.edu** (please include Assistant Professor Position in the subject heading). Deadline for applications is February 15, 2002. *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE

The Burnham Institute is a nonprofit biomedical research foundation that focuses on cancer, neuroscience, and aging research. A senior-level Research Associate position is available in the Institute's Molecular Analysis facility to perform proteomics and mass spectrometry analysis. The ideal candidate must have experience in mass spectrometry plus one or more of the following areas; 2-D electrophoresis, protein/peptide purification, and HPLC. Fluency in English, strong organizational skills, and the ability to work independently as well as in a team environment are required. Please send résumé and salary requirment to: **Christian Lombardo, Ph.D., 10901 North Torrey Pines Road, La Jolla, CA 92037. E-mail: humanresources@burnham.org**. *Equal Opportunity Employer.*

POSITIONS OPEN

H. LEE MOFFITT Cancer Center & Research Institute
The End Of Cancer Begins Here.
A National Cancer Institute Comprehensive Cancer Center At the University of South Florida

USF University of South Florida College of Medicine

POSTDOCTORAL ASSOCIATE

Seeking individual who will be responsible for conducting research in an NIH-funded laboratory headed by **Dr. Kapil Bhalla**, Scientific Director of the Comprehensive Breast Cancer Program, which involves cloning, transfection, and functional analyses of genes that regulate the cell cycle and apoptosis of human cancer cells.

Ph.D. in biology, biological sciences, life sciences, or other related field as well as interest in cancer research. Experience in gene expression by microarrays, evaluation of protein biochemistry with 2-D gels, with animal models, the yeast two-hybrid system, and tissue culture is desirable. Excellent English skills (both written and verbal) required.

Outstanding research environment and competitive compensation. Send curriculum vitae and the names of three references to: **Lisa Sellers, Management Assistant-Clinical Investigations, H. Lee Moffitt Cancer Center and Research Institute, 12902 Magnolia Drive, MRC–3E, Tampa, FL 33612. E-mail: sellerel@moffitt.usf.edu; website: http://www.moffitt.usf.edu**.

ASSISTANT/ASSOCIATE PROFESSOR
Tenure-Track: Two Positions
Morgan State University

The Department of Biology at Morgan State University invites applications and nominations for two tenure-track positions at the rank of Assistant/Associate Professor beginning July of 2002. These positions will support the interdisciplinary doctoral program in bioenvironmental science as well as the Department's existing undergraduate degree program in biology. One of the successful applicants will hold a Ph.D. in plant biotechnology, while the other successful candidate will hold a Ph.D. in environmental science and/or environmental health sciences. Applicants will be required to teach graduate and undergraduate courses in support of the Ph.D., M.Sc., and B.Sc. degree programs as well as develop relevant research programs. Applicants with an established record of multidisciplinary and extramurally funded research experience will be given strongest consideration.

For full consideration, complete application materials must be received by March 4, 2002. Completed applications must include a letter of application noting specific qualifications for the requirements of the position, current curriculum vitae, statement of teaching philosophy and research experience/interest, official transcript(s), and three letters of recommendation from professional references. Applications should be sent to: **T. Joan Robinson, Ph.D., Dean, School of Computer, Mathematical and Natural Sciences, Calloway Hall, Room 217, Morgan State University, 1700 East Cold Spring Lane, Baltimore, MD 21251**.

ASSISTANT PROFESSOR
PLANT GENOMICS

This 12-month, tenure-track position (Number 935510) in plant genomics (80% research; 20% teaching) in the School of Forest Resources and Conservation, Institute of Food and Agricultural Sciences, University of Florida, is part of the Genetics Institute (**website: http://www.ufgi.ufl.edu**). Opportunities exist for cooperative research on forest biology projects (**website: http://www.sfrc.ufl.edu/announce.html**). Contact: **Dr. John Davis; Telephone: 352-846-0879; e-mail: jmdavis@ufl.edu.** Formal review of applications will begin January 25, 2002. *The University of Florida is an Equal Opportunity/Equal Access/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

EUKARYOTIC GENETICS
SEARCH EXTENDED
University of North Texas, Denton, Texas

The Department of Biological Sciences (**website: http://www.biol.unt.edu**) invites applications for a tenure-track/tenured position beginning in September 2002. An outstanding eukaryotic geneticist at the rank of **ASSISTANT** or **ASSOCIATE PROFESSOR** is sought. Preference will be given to applicants whose research complements an existing group of funded Scientists working in various areas of molecular biology. Candidates working with model organisms are especially encouraged to apply. The faculty member will be responsible for teaching a course in genetics to undergraduate majors and for a graduate course in the faculty member's research area.

Located in the Dallas-Fort Worth metroplex, the University of North Texas is a growing institution with an enrollment of approximately 28,000 students. The Department is rapidly growing and has a strong research focus. Excellent research facilities and competitive salary and start-up funds are available. The Department offers undergraduate and graduate (M.S./Ph.D.) degrees in biology, biochemistry, molecular biology, and environmental science. Submit curriculum vitae, names of three references, and statement of research goals to:

Earl G. Zimmerman, Chair
Department of Biological Sciences
P.O. Box 305220
University of North Texas
Denton, TX 76203-5220

Review of applications will begin immediately and continue until a suitable candidate is chosen.

The University of North Texas is an Equal Opportunity/Affirmative Action Institution committed to diversity in its Employment and educational programs, thereby creating a welcoming environment for everyone.

ADJUNCT FACULTY POSITION
DEPARTMENT OF CELLULAR AND MOLECULAR PHARMACOLOGY
University of California at San Francisco
School of Medicine

The Department of Cellular and Molecular Pharmacology invites applications for **ASSISTANT ADJUNCT PROFESSOR** (appointment at more advanced level may be considered as commensurate with experience). The successful candidate will serve as full-time Lecturer and Director of pharmacology courses for professional students in the medical, pharmacy, and dental programs. He or she will also contribute to curriculum design and eventually oversee the Department's professional teaching program. Ph.D., Pharm.D., or M.D. or equivalent Doctoral-level degree is required. Expertise in the area of molecular pharmacology and teaching experience are highly desired.

All materials including letters of reference should be sent to the following address no later than March 15, 2002: **Dr. David Julius, Chair, Faculty Search Committee, Department of Cellular and Molecular Pharmacology, 513 Parnassus Avenue, HSW1201G, University of California, San Francisco, CA 94143-0450**.

The University of California, San Francisco, is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

POSTDOCTORAL POSITION is available to study self-propagating conformational transition of prion and nonprion proteins. Highly motivated candidates with background in protein folding and biochemistry are encouraged to apply. Experience in protein expression/purification, mass spectroscopy, and electron microscopy is desirable. Visit **website: http://www.umbi.umd.edu/~mbc/pages/baskakov.htm** for details. Please send curriculum vitae and the names of three references to: **Ilia Baskakov, Ph.D., University of Maryland Biotechnology Institute, 725 West Lombard Street, Baltimore, MD 21201. FAX: 410-706-8184; e-mail: baskakov@umbi.umd.edu**.

Staff Pharmacologist/Pharmacokineticist (Interdisciplinary)
GS-405/415/1320-13/14
Toxicology & Pharmacology Branch
Developmental Therapeutics Program
Division of Cancer Treatment and Diagnosis
National Cancer Institute, National Institutes of Health

Vacancy Announcement # NCI-02-2300

The Toxicology & Pharmacology Branch (T&PB) of the Development Therapeutics Program is seeking candidates for the position of Staff Pharmacologist/ Pharmacokineticist. The Toxicology & Pharmacology Branch plans, directs and evaluates a collaborative, extramural, contract-supported program to conduct preclinical pharmacology and toxicology studies for anticancer drug and vaccine development. Candidates must have earned the Ph.D. degree in Pharmacology, Biochemistry, Chemistry or a closely related discipline and possess a working knowledge of modern pharmacological, biochemical, and biological methods of drug evaluation. The candidate must have post-doctoral experience in the application of such methods to the study of new anti-cancer agents. Must have at least 2-5 years of postgraduate experience in evaluating pharmacology and pharmacokinetics results and have demonstrated ability to summarize and reach conclusions in a highly professional manner. Experience with oncology agents is desirable.

The Staff Pharmacologist/Pharmacokineticist will be responsible for (1) managing the development of methodologies to determine levels of drugs and/or their metabolites in biological matrices; (2) determining the pharmacokinetic profile of drugs of interest in various species; (3) integrating pharmacological data into the drug development process in order to minimize undesirable toxicity and to attain effective drug levels; and (4) summarizing all pharmacology data and making recommendations for starting doses, dose escalation schemes and treatment schedules for clinical trial.

In order for us to validate your qualifications, it is necessary for you to describe your proficiency in the following areas: (1) knowledge of preclinical pharmacology study design and implementation; (2) skill in presentation of preclinical pharmacology studies by oral communication; and (3) skill in presentation of preclinical pharmacology studies by written communication.

To apply for this position, please submit your application/resume to:

National Cancer Institute
Human Resource Management
& Consulting Branch
Executive Plaza South, Suite 550
6120 Executive Blvd., MSC 7209
Rockville, MD 20852-7209

For further information regarding application procedures, you may call the staffing office at **301-402-2789** or please visit: **http://careerhere.nih.gov**, vacancy announcement , NCI-02-2300. For information regarding the duties and responsibilities of the position, you may contact **Dr. Joseph Covey at 301-435-9166**.

The salary for this position ranges from $63,211 to $97,108 per annum. Benefits include health and life insurance options, retirement, paid holidays and vacation and sick leave.

Applications must be postmarked no later than February 1, 2002 to be considered. Applicants must be U.S. Citizens. *NIH/NCI is an Equal Opportunity Employer.*

St Jude Children's Research Hospital

ALSAC • Danny Thomas, Founder

POSTDOCTORAL POSITION IN MOLECULAR AND DEVELOPMENTAL BIOLOGY

(REQ #3286)

A NIH-funded postdoctoral position is available to work on different aspects of mammalian central nervous system and visual system development by analyzing the functional roles of the homeobox genes *Six3* and *Prox1* in these processes. Using generated knock-out and transgenic mice, we aim to unravel the regulatory pathway in which these genes are participating during the development of these structures. Candidates who recently obtained a Ph.D. or MD degree with a strong background in developmental biology and neuroanatomy are encouraged to apply. Interested individuals should send their curriculum vitae, a brief description of their research interests, and the names of three references including requisition #3286 to:

Guillermo Oliver, Ph.D.
Associate Member
Department of Genetics
St. Jude Children's Research Hospital
332 N. Lauderdale • Memphis, TN 38105, USA
www.stjude.org/departments/oliver.htm

Equal Opportunity Employer

Avian Population Biology

Department of Biological Sciences Simon Fraser University

The Department of Biological Sciences is seeking a tenure track faculty member in the area of AVIAN POPULATION BIOLOGY. We seek an individual working in any area of avian population biology, to complement the existing strengths of the Center for Wildlife Ecology (http://www.sfu.ca/biology/wildberg/index.html). Given the mandate of the Center, we will consider evidence of willingness and ability to work with government agencies, and an interest in the application of research to conservation and management issues. The successful candidate will pursue a vigorous, externally funded research program, train graduate students, and carry a regular teaching load. The appointment can be made at any rank, contingent on appropriate experience. Minimally, a Ph.D. degree is required, and appropriate post-doctoral experience is preferred. Applicants should send, no later than February 28, 2002, a Curriculum Vitae, representative reprints, a one-page summary of their research objectives, and three letters of reference to:

Dr. Norbert H. Haunerland, Chair
Department of Biological Sciences
Simon Fraser University
8888 University Blvd.
Burnaby, B.C. V5A 1S6
Canada
Fax: 604-291-4312

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

Simon Fraser University is committed to employment equity, welcomes diversity in the workplace, and encourages applications from all qualified individuals including women, members of visible minorities, aboriginal persons, and persons with disabilities.

FACULTY POSITION IN APPLIED PHYSICS
California Institute of Technology

The Applied Physics program at Caltech invites applications for a tenure-track position as **ASSISTANT PROFESSOR**. We are primarily interested in seeking highly qualified junior candidates who are committed to research and teaching in areas in which fundamental physical principles are applied to important technological and/or interdisciplinary problems. The research areas may include but are not limited to soft condensed matter, biophysics, nanofabrication/characterization, electronic, photonic, and mechanical nanoscale devices based on novel materials. For especially well-qualified candidates, a senior appointment may be considered. The initial term of appointment is normally for four years, and appointment is contingent upon completion of a Ph.D. Exceptionally well-qualified candidates may be considered at the Associate or Full Professor level. Interested candidates must file an online application by visiting **website: http://www.aph.caltech.edu/search/** and following the instructions. As part of those instructions, you will be asked to submit (by e-mail) pdf versions of your curriculum vitae, a list of your publications, a teaching and research plan, and copies of two to three significant publications. The deadline for receipt of all application materials is February 15, 2002, but evaluation of candidates will begin as soon as completed applications are received. *Caltech is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*

COLLEGE OF PHARMACY AND ALLIED HEALTH PROFESSIONS
St. John's University

The Department of Pharmaceutical Sciences is seeking applications for a tenure-track position at the **ASSISTANT/ASSOCIATE PROFESSOR** level. Applicants must possess a Ph.D./M.D. and postdoctoral experience in biomedical sciences. Responsibilities include teaching undergraduate courses in human pathology and pathophysiology and graduate courses in area of specialty as well as establishing an active research program and mentoring graduate students.

The Department possesses excellent facilities and support services for research. Modern instrumentation, AAALAC-accredited facility, and tissue culture laboratories are available. Application letters with curriculum vitae, statement of research interests, and letters of reference should be sent to: **Dr. Louis D. Trombetta, Professor and Chair, Department of Pharmaceutical Sciences, St. John's University, 8000 Utopia Parkway, Jamaica, NY 11439. E-mail: trombetl@stjohns.edu. website: http://www.stjohns.edu**. *St. John's University is an Equal Opportunity Employer and encourages applications from women and minorities.*

POSTDOCTORAL POSITION

A Postdoctoral position is available immediately in the Immunopathology Section (IPS) of the National Institute of Dental and Craniofacial Research (NIDCR) at the NIH. The research in the IPS focuses on the biological mediators and signal transduction pathways involved in the modulation of the human monocyte/macrophage functions that contribute to the immunopathology associated with various diseases. Emphasis is placed on the role of matrix metalloproteinases (MMPs) and a disintegrin and metalloproteinase (ADAMs) family of enzymes in the regulation of connective tissue turnover and cytokine release. Candidates should have experience and/or interest in signal transduction, cellular and molecular biology, and inflammation. Applicants must have a Ph.D., D.D.S., D.M.D., or M.D. or equivalent degree and less than five years of postdoctoral training. Interested applicants should e-mail or mail their curriculum vitae and contact information for three references to: **Dr. Larry M. Wahl, Chief, Immunopathology Section, Building 30, Room 325, NIDCR, NIH, Bethesda, MD 20892-4352. E-mail: lwahl@dir.nidcr.nih.gov.**

NIH is an Equal Opportunity Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR OF BIOLOGY
Search Extended
University of Arkansas at Little Rock

The Biology Department at the University of Arkansas at Little Rock invites applications for a tenure-track Assistant Professor position to begin the fall term of 2002. Applicants must have a Ph.D. in the biological sciences. Postdoctoral experience is expected. Although applications from any area of biological sciences will be accepted, we are especially interested in the areas of physiology, endocrinology, toxicology, or neurobiology. The successful candidate will teach an annual undergraduate course in histology, an annual freshman or sophomore course, and will be expected to develop an upper-division or graduate course appropriate to his or her discipline. For further information, visit the Biology **website: http://www.uair.edu/~biology**. Applications must include a letter of intent, curriculum vitae, statements of teaching philosophy and research interests, undergraduate and graduate transcripts, and three letters of reference. Review of the applications will begin at the end of January 2002 and will continue until the position is filled. Send applications and have letters of reference forwarded to: **Dr. Maurice G. Kleve, Faculty Search Committee, Biology FH–406, University of Arkansas at Little Rock, 2801 South University Avenue, Little Rock, AR 72204-1099**.

Equal Opportunity/Affirmative Action. Under Arkansas law, all applications are subject to disclosure. Persons hired must have proof of legal authority to work in the United States.

FACULTY POSITIONS
Developmental Biology and Genetics

As part of a campuswide expansion in the areas of developmental biology and genetics at the University of Rochester, the Center for Oral Biology invites applications for two faculty positions at the **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** level. Qualified applicants in any areas of animal or human developmental biology or genetics are encouraged to apply. Preference will be given to individuals conducting research related to craniofacial development. Successful candidates at the Assistant Professor level are expected to develop strong, externally funded research programs. Individuals seeking Associate or Full Professor positions should have established, outstanding research programs and record of extramural funding. Faculty members at the Center for Oral Biology hold joint appointments in appropriate academic departments and participate in graduate student training in several graduate programs in the University of Rochester. For more information, please consult **website: http://www.urmc.rochester.edu/Aab/**. Applications will be accepted immediately and until positions are filled. Please send curriculum vitae, statement of current and future research interests, and names and addresses of at least three references to: **Dr. James Melvin, Center for Oral Biology, Box 611, University of Rochester Medical Center, 601 Elmwood Avenue, Rochester, NY 14642**. *The University of Rochester is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

RESEARCH SCIENTIST. The Molecular Cardiology Institute, a small, private, not-for-profit laboratory, seeks a Ph.D. currently working in cardiovascular research. Must know cardiomyocytes isolation, culture and microinjection, immunocytochemistry, HPLC, and general molecular biology. *Must be U.S. citizen or permanent resident.* Write or e-mail: **Jose Marin, M.D., Director, 75 Raritan Avenue, Highland Park, NJ 08904. E-mail: tmci@att.net.**

MICROBIOLOGIST

Sabbatical replacement (2002–2003) in the Department of Biology at Pacific University in Forest Grove, Oregon. Able to teach microbiology, general biology (cell/molecular), other courses in area of specialty for both biology majors and nonscience majors. Consult **website: http://www.biology.pacificu.edu** for application information. Review of applications begins February 15, 2002.

POSITIONS OPEN

ASSISTANT PROFESSOR POSITION
Bioinformatics or Computational Biology

The Department of Biology at The University of Texas at San Antonio (**website: http://lshome.utsa.edu**) invites applications for a tenure-track Assistant Professor faculty position in bioinformatics, neuroinformatics, genomics, or other computational approaches to analyzing cellular systems (pending budget approval). The Department of Biology consists of 27 faculty members and offers a Bachelor's degree in biology, Master's degrees in biology and biotechnology, and a Doctoral degree in biology with an emphasis in neurobiology or cell and molecular biology. Computational biology is a major research focus at UTSA with support from the Cajal Neuroscience Research Center and participating faculty in the Departments of Biology and Computer Sciences. The new faculty member will have the opportunity to be part of a developing Bioengineering/Biotechnology Program for the South Texas area to be centered in a planned 160,000-square-foot building at UTSA. Responsibilities include teaching courses offered either at the UTSA downtown campus or the main campus and occasionally at night, research and administrative service. Required qualifications: Applicants must have a Doctoral degree in biology or a related discipline and postdoctoral experience. Applicants must submit via U.S. postal service a letter of application; curriculum vitae; copies of recent publications; a research statement; teaching interests and experience; and the names, postal addresses, e-mail addresses, and telephone numbers of three references. Review of applications will begin on January 15, 2002, and will continue until the position is filled. *Applicants who are not U.S. citizens must state current visa and residency status.* Address applications to: **Search Committee Chair, Department of Biology, The University of Texas at San Antonio, 6900 North Loop 1604 West, San Antonio, TX 78249. FAX: 210-458-5658**. *UTSA is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSORSHIP VERTEBRATE ZOOLOGIST

Biology department emphasizing teaching seeks a Wildlife Biologist, tenure-track position. Ph.D. required. Preferred candidate will be able to teach general biology, conservation biology, mammalogy, ornithology, vertebrate zoology, and wildlife management. Direction of graduate students, research program, and university service expected. Position starts August 2002. Postdoctoral experience preferred but A.B.D. considered for term appointment with possible conversion to tenure track upon completion of degree. Send curriculum vitae, transcripts, statements of research interests and teaching philosophy, and three reference letters to: **Biology Search Committee, Personnel Department, Station 21, Eastern New Mexico University, Portales, NM 88130**. Screening begins 1 February 2002 but applications accepted until position is filled. For more information, **Telephone: 505-562-2753; website: http://www.enmu.edu**.

Affirmative Action/Equal Opportunity/Title IX Employer.

POSTDOCTORAL NEUROSCIENTIST
Cortical Development and Axon Guidance
University of Washington

Postdoctoral positions available immediately to study how layer-specific gene expression regulates laminar fate and cortical axon connections. Techniques include cortical cell transplantation, explant culture, and molecular methods. Experience with neuroanatomy or molecular biology and a strong interest in development are preferred. Visit our **website: http://faculty.washington.edu/rhevner/** for more information. Please send curriculum vitae and the names of three references to: **Dr. Robert Hevner, Pathology Box 359791, 325 Ninth Avenue, Seattle, WA 98104. E-mail: rhevner@u.washington.edu**. *The University of Washington is an Affirmative Action/Equal Opportunity Employer.*

Faculty Positions at the Keck Graduate Institute of Applied Life Sciences

Systems Biology and Signal Transduction

KGI, an innovative new academic institution in Claremont, California, dedicated to education and research programs in the applied life sciences, is seeking new faculty members. The successful candidate for this position will have broad research interests with emphasis on aspects of target validation and drug discovery, particularly in signal transduction or systems approaches to biological processes. Candidates will be expected to participate in the development and teaching of an educational program and to forge connections with industry (e.g., biotechnology, pharmaceuticals, biomedical instrumentation). Industry experience is a strong plus. He/she will play a major role in developing collaborative research with other faculty at KGI specializing in biomolecular engineering, genomic and proteomic technologies, computational biology, target and drug discovery, microfluidics, and tissue engineering. Applicants should have a Ph.D. or equivalent degree and should submit their curriculum vitae, a statement of research and teaching interests, and a list of three professional references to: **Prof. David J. Galas, Chief Academic Officer, Keck Graduate Institute, 535 Watson Drive, Claremont, CA 91711. FAX: 909/607-8598. Email: david_galas@kgi.edu**

Computational Biology

Faculty in computational biology/bioinformatics and the modeling of complex biological systems, with dedication to excellence in teaching and research, are sought at all levels, particularly the junior level. Successful candidates will be creative and independent in spirit with significant experience in academic or industrial science and/or engineering, and a desire to build interdisciplinary groups. They will be expected to establish a high quality research program, create and teach in a strong educational program and forge connections with industry (e.g., biotechnology, pharmaceuticals, biomedical instrumentation). The faculty of the Institute comes from both industry and academia. Competitive salaries, excellent facilities, liberal leave and consulting policies also contribute to the spirit of this startup institution. Applicants should send a letter of interest, curriculum vitae, names and contact details of three references to: **Professor Greg Dewey, Keck Graduate Institute, 535 Watson Drive, Claremont, CA 91711. FAX: 909/607-8086. Email: greg_dewey@kgi.edu**

Bioengineering

Applications for a faculty position in bioengineering, with focus on interdisciplinary teaching and research in the applied life sciences, are sought at all levels, particularly the senior level. Successful candidates will be expected to create and teach in a strong educational program and forge connections with industry (e.g., biotechnology, pharmaceuticals, biomedical instrumentation). They will provide leadership in developing collaborative experimental research with other faculty at KGI specializing in biomolecular engineering, genomic technology, microfluidics, and tissue engineering. Applicants should have a Ph.D. or equivalent degree and should submit their curriculum vitae, a statement of research and teaching interests, and a list of three professional references to: **Dr. James D. Sterling, Bioengineering Search Committee, Keck Graduate Institute, 535 Watson Drive, Claremont, CA 91711. FAX: 909/607-9826. Email: jim_sterling@kgi.edu.**

www.kgi.edu

EOE

The James Irvine Foundation Postdoctoral Minority Fellowship at the California Institute of Technology

The California Institute of Technology invites applications and nominations for The James Irvine Foundation Postdoctoral Minority Fellowship, a prize fellowship open to underrepresented minority scholars in science, mathematics and engineering.

The fellowship is to begin Fall 2002. The appointment is for a three-year duration, carries an annual stipend of $46,700, and offers additional research and travel funds.

This Fellowship program has been established to offer scientists from historically underrepresented minority populations in the United States the best possible opportunity to develop their talents. Historically underrepresented minorities are members of the following groups: African American/Black, Hispanic/Latino, Native American/American Indian, and Asian Pacific Islander.

Candidates will typically have earned a Ph.D. within the past few years, and will wish to conduct research in the areas in which Caltech's faculty are currently active. (Summaries of faculty research interests are listed on Division web sites at www.caltech.edu.)

Materials in support of an application or nomination should be sent to:

The James Irvine Postdoctoral Minority Fellowship
California Institute of Technology
Mail Code 08-31
Pasadena, CA 91125

Materials should arrive by January 15, 2002, and need to include curriculum vitae (with citizenship status indicated), bibliography of publications, preprints of manuscripts not yet published, and a description of the anticipated research program. Candidates are strongly encouraged to contact relevant Caltech faculty in advance to discuss research interests and proposed research program. The candidate or nominator is requested to ensure that at least two letters of recommendation are sent directly to Caltech.

Fellowship candidates will automatically be considered for all other available postdoctoral positions in their fields of interest. The California Institute of Technology is an independent, privately supported university.

Caltech is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.

DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY
Stanford University

The Department of Microbiology and Immunology at Stanford University School of Medicine invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. The appointee will interact with other faculty members who have research interests in broad areas related to stem cell biology or functional genomics. The appointee will be expected to develop a creative, independent research program in basic science investigations of mechanisms of disease in the new Sir Norman Foster-designed Center for Clinical Sciences Research building.

Candidates should have a Ph.D. and/or M.D. degree and postdoctoral research experience. Candidates are encouraged to apply by February 1, 2002, with curriculum vitae and a description of future research plans and arrange to have three letters of reference sent by **FAX: 650-736-0080** or mailed to:

Helen M. Blau, Ph.D.
Director, Baxter Laboratory of Genetic Pharmacology
Department of Microbiology and Immunology
269 Campus Drive, CCSR 4215
Stanford University School of Medicine
Stanford, CA 94305-5175

Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.

MOLECULAR BIOLOGIST/ CELL BIOLOGIST/IMMUNOLOGIST

The School of Medicine at the University of Alabama at Birmingham is seeking a new faculty member at the **ASSISTANT/ASSOCIATE PROFESSOR** level (on the tenure track) to develop program in molecular parasitology. Appointment rank to be determined based on qualifications and experience. The position requires a Doctoral degree in molecular biology, biochemistry, immunology, cell biology, or a related discipline and at least two years of experience in that field. The emphasis will be on an independent, laboratory-based Investigator who is motivated to build a molecular parasitology program dovetailing with existing strengths at UAB. In addition to the requisite technical expertise, an important qualification will be a commitment to institution-wide collaborative investigation.

Applications will be accepted until the position is filled. Interested candidates should submit their curriculum vitae, a one- to two-paragraph statement of research interests, and three letters of reference to:

Con J. Beckers, Ph.D.
Chair, Search Committee
Division of Geographic Medicine
University of Alabama at Birmingham
(BBRB 206)
845 19th Street South
Birmingham, AL 35294-2170

UAB is an Equal Employment Opportunity Employer.

A **POSTDOCTORAL POSITION** is available in the Division of Endocrinology, Diabetes, and Medical Genetics to study molecular aspects of gene expression-mediating from cell formation. Candidates should possess a Ph.D. in molecular/cellular biology or a related discipline and have a record of publication. Experience with adenovirus and/or gene targeting is highly desirable. Please send or e-mail curriculum vitae and names of three references to: **Dr. Yuchang Fu, STB/514, Medical University of South Carolina, 114 Doughty Street, Charleston, SC 29403. E-mail: fuy@musc.edu**.

The Medical University of South Carolina is an Equal Opportunity Employer and actively seeks application from all qualified persons whatever their sex, race, religion, national origin, or disability. Women and minorities are encouraged to apply.

POSITIONS OPEN

UIC The University of Illinois at Chicago

Three new positions at the **ASSISTANT/ASSOCIATE PROFESSOR** level are available within the Center for Magnetic Resonance Research (**website: http://www.uic.edu/com/mrc**) with cross-appointments to Departments in the Colleges of Medicine, Arts and Sciences, and Engineering at the University of Illinois at Chicago. The research MRI equipment includes a 3T whole-body scanner (GEMS Signa, LX) housed in a new facility adjacent to the hospital and animal care facility. The world's first 9.4 Tesla whole-body human scanner is under production for delivery in the summer of 2002 when its new building will be completed. In addition to conventional MRI, the research capabilities include diffusion tensor, perfusion, sodium, phosphorus, routine functional (BOLD) MR imaging, MRA, and MR spectroscopy. Potential clinical and research collaborations exist with Neurosurgery, Neurology, Cardiology, and Psychiatry. The successful applicants will have at least two years of experience in MR physics and MR instrumentation on human scanners along with a Ph.D. in a mathematical, scientific, or computer science discipline. Experience in pulse sequence development and hardware on the GEMS platform is preferred.

The candidate should be motivated to work in a collaborative, state-of-the-art clinical and research environment and be able to demonstrate independent research abilities. Please forward curriculum vitae and introduction letter by February 10, 2002, to: **Keith Thulborn, M.D., Ph.D., Professor and Director of Center for MR Research, University of Illinois at Chicago, Room 1191 OCC (M/C 711), 1801 West Taylor Street, Chicago, IL 60612**. *UICMC is an Affirmative Action/Equal Opportunity Employer offering competitive salary and benefits package.*

PH.D. RESEARCHER POSITION
Anesthesiology Research

The University of California, Irvine, will be recruiting during the month of January 1 through 31, 2002, for an **ASSISTANT/ASSOCIATE/FULL PROFESSOR**, tenure track. Requirements include Ph.D. or M.D. with significant research training or experience. Molecular biology experience is an asset. Opportunities for experimental and clinical research and collaborations with the basic sciences including biomedical engineering. Present departmental research areas include gas kinetics in anesthesia during nonsteady state (NIH-funded program, HL-42637, systems to cellular physiology) and the study of mechanisms of anesthesia and memory (includes PET and MRI imaging technologies). Duties will include teaching of residents and medical students.

Apply to: **Peter H. Breen, M.D., FRCPC, Vice Chair and Director of Academic Affairs, Search Committee Chair, Department of Anesthesiology, UCI Medical Center, 101 The City Drive South, Orange, California 92868. FAX: 714-456-7702**. Closing date: January 31, 2002.

UCI is an Equal Opportunity Employer committed to excellence through diversity.

POSTDOCTORAL RESEARCH SCIENTIST
Department of Neurological Surgery
Columbia University

Seeking applicants for Postdoctoral position to work in neurovascular laboratory. Successful applicant will have M.D. or Ph.D. and experience with rodent surgical models, preferably those for strokes. Candidate will interact with multidisciplinary Investigators in collaborative research environment and will be responsible for immunohistochemical procedures.

Send résumé to: **Susan E. McMahon, Department of Neurological Surgery, Columbia University, 710 West 168th Street, Room 431, New York, NY 10032. E-mail: sem1@columbia.edu.**

Columbia University takes Affirmative Action to ensure Equal Opportunity.

POSITIONS OPEN

EPIDEMIOLOGY/INFECTIOUS DISEASE

The School of Medicine at the University of Alabama at Birmingham is seeking a new faculty member at the **ASSISTANT PROFESSOR** level on the tenure track to address issues related to epidemiology and infectious disease. Current faculty interests include malaria, toxoplasmosis, filariasis, onchocerciasis, HIV, pneumocystis, arboviruses, bluetongue virus, and other opportunistic infections. We are seeking applicants with experience in international health, HIV/STD prevention research in international settings. Position will be expected to obtain grant funding during their UAB employment. Interested applicants should contact:

Sten H. Vermund
Professor and Director
Division of Geographic Medicine
845 19th Street South, BBRB 206B
Birmingham, AL 35294-2170
Telephone: 205-975-7700
FAX: 205-934-5600
E-mail: sten@uab.edu

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

A **RESEARCH ASSOCIATE** position in biochemistry and biophysics is available in the Center for BioMolecular Science and Engineering of the Naval Research Laboratory in Washington, D.C. The subject of a current project is in the analysis of the structure and function of photosynthetic proteins. Applicants must have experience in gene cloning and site-directed modification, protein expression, purification, and biochemical characterization. Knowledge in fluorescence spectroscopic and electron microscopic techniques is desired. Starting salary for the position sponsored by the National Research Council is $54,000 per year with an excellent possibility of transition to permanent status after a successful tenure. *To be considered, you must be a U.S. citizen or current permanent resident* and have a Ph.D. received within the past five years. Please submit your curriculum vitae along with names and addresses of three references to: **Dr. Nikolai Lebedev; e-mail: ln4u@virginia.edu.**

The Naval Research Laboratory is an Equal Opportunity Employer.

CENTER FOR ENVIRONMENTAL RESEARCH AND CONSERVATION
Columbia University

ASSOCIATE RESEARCH SCIENTIST position available in conservation genetics. Research will focus on the systematics of endangered large mammals, particularly in Asia. Substantial experience in molecular genetics, quantitative genetics, and field collection essential. Salary competitive and commensurate with experience. Position begins February 1, 2002. Send curriculum vitae; statement of research experience and interests; and three letters of reference by January 10, 2002, to: **Dr. Don J. Melnick, Director, Center for Environmental Research and Conservation (CERC), 1200 Amsterdam Avenue, Columbia University, New York, NY 10027.** *We are an Affirmative Action/Equal Opportunity Employer.*

DEVELOPMENTAL BIOLOGIST COMMUNITY ECOLOGIST

Gonzaga University invites applications for two tenure-track **ASSISTANT PROFESSOR** positions in the disciplines above to begin in fall 2002. For further information about applying for these positions and about the Biology Department, see our **website: http://www.gonzaga.edu/academics/biology/**. For full consideration, applications and letters of reference should be received by January 22, 2002. Gonzaga University is a Jesuit, Catholic, humanistic university looking for candidates who can contribute to its educational needs and missions. *Gonzaga is an Affirmative Action/Equal Opportunity Employer seeking to increase its diversity.*

The Ellison Medical Foundation

Senior Scholar Award in Aging

***Request for Letters of Intent Deadline*: March 13, 2002**

The Aging Program, now in its fifth year, supports basic biomedical research on aging relevant to understanding aging processes and age-related diseases and disabilities. The Senior Scholar Award in Aging is intended to provide significant support to established investigators in order to allow the development of new, creative research programs by investigators who may not currently be conducting aging research or who may wish to develop new research programs in aging. The Foundation particularly wishes to stimulate new research, which has rigorous scientific foundations, but which may not be currently funded adequately, because of its perceived novelty, its high risk, or because it is from an area where traditional research interests absorb most funding. **Areas of interest include, but are not limited to:**

- Structural biology
- Molecular genetics
- Studies with model systems ranging from lower eukaryotes to humans
- Inquiries testing the relevance of simpler models to human aging
- Genetic epidemiology of aging; candidate longevity genes
- Aging in the immune system
- Host defense molecules in aging systems
- Mechanisms of free radical induced cell aging
- Mechanisms of aging in various differentiated cell populations
- Gene/environment and gene/gene interactions
- Integrative physiology
- Our microbiome
- New approaches to age-modulated disease mechanisms: Alzheimer's disease and others

Senior Scholar Award in Global Infectious Disease m

***Request for Letters of Intent Deadline*: March 13, 2002**

The Global Infectious Disease Program, now in its second year, focuses on the most basic research on molecular and cellular mechanisms of disease with special attention afforded to tuberculosis, malaria and parasitoses which account for much of the world's morbidity, and are grossly neglected in federally funded research in the U.S. **Areas of interest include, but are not limited to:**

- Any fundamental studies on exotic microbes and diseases*
- Our microbiome: natural microflora and pathogen ecology and evolution
- Therapeutic role of probiotics
- Diet, nutrition and Immunity
- Implications of disease eradication
- Zoonoses: wildlife and human disease
- Comparative immunology
- Threats from newly explored habitats
- Host factors, human genomics and disease susceptibility
- Signaling and gene flow between parasites & hosts
- Parasite molecular mimicry I
- Fever and other symptomatology
- Plasmid and phage determinants of virulence
- Phylogeny and ultimate origins of viruses
- New concepts for antivirals and antiparasitics
- Nosocomial infection and sanitary precaution
- Dyshygenic abuse of antibiotics and microbicides

*Investigations on model systems and familiar diseases are by no means precluded, but should be informed by a vision of their applicability to the global disease burden.

For either of the above awards: Letter of Intent to submit an application must be received before close of business March 13, 2002 at The Ellison Medical Foundation address below. ***See website for guidelines on submitting your letter of intent:*** **http://www.ellisonfoundation.org.** Applicants invited to submit a full application will be notified of their selection and provided with application forms about July 12, 2002. Up to ten Senior Scholars for each Program will be selected in 2002. **Each award will be made for up to $150,000 per year direct cost, with full indirect cost at the institution's NIH negotiated rate added to that, for up to four years.**

Contact: Richard L. Sprott, Ph.D., Executive Director, or Stephanie James, Ph.D., Deputy Director
The Ellison Medical Foundation
4710 Bethesda Avenue, Suite 204
Bethesda, MD 20814-5226
Phone: 301-657-1830 or 2511; Fax: 301-657-1828

The Institutes for Pharmaceutical Discovery (IPD) has a dual research focus. The first area is dedicated to discovering and developing new innovative medicines for the treatment of diabetes, its complications, and related disorders. If you are interested in contributing to this research effort, consider the following positions:

RESEARCH SCIENTISTS with a Ph.D. or the equivalent in chemistry, organic chemistry, or related field and experience in the field to be involved in the design and synthesis of biologically active target molecules.

RESEARCH ASSOCIATES in our Molecular Biology Department with M.S. or the equivalent in microbiology, cellular biology, pharmacology, organic chemistry, biochemistry, or a related scientific discipline plus experience in the field. These positions will work on research projects dealing with the development of therapeutic DNA constructs for gene therapy in the treatment of diabetes.

RESEARCH ASSOCIATES in our Pharmacokinetics Department with M.S. or the equivalent in pharmaceutical-related sciences with experience in the field. These positions will conduct small animal survival surgery and conduct *in vivo* pharmacokinetic/ADME studies.

The second area of our research effort is customized assay development and analytical services for the bioscience industry. If you want to contribute to our work in identifying and developing assays for relevant biomarkers to diagnose diseases, in monitoring the efficacy of treatments, and accelerating the discovery of new drugs using the molecular targets emerging from genomics, we are currently seeking qualified candidates for the following position:

RESEARCH SCIENTISTS in our Assay Development Department with Ph.D. or the equivalent in biology, chemistry, immunology, or related discipline with experience in the field. These positions will lead a team of Scientists in the research and development of assays.

We are committed to scientific excellence with a state-of-the-art research facility and strong ties to both industrial and academic institutions. We offer an excellent opportunity to work in a multidisciplinary and multinational team environment with significant opportunities for growth. IPD offers a competitive compensation and benefits package. Interested candidates should send their curriculum vitae to:

Human Resources
The Institutes for Pharmaceutical Discovery
23 Business Park Drive
Branford, CT 06405
FAX: 203-315-5920
E-mail: info@ipd-discovery.com

POSTDOCTORAL FELLOW
Stoddard Cancer Research Institute

The Stoddard Cancer Research Institute has available a Postdoctoral Fellow position for research in gene transfer systems and their application to the treatment and prevention of cancer.

Laboratory focus is on translational research with a long-term goal of developing new drugs to inhibit specific cancer targets within cells and improving gene transfer into humans. Backgrounds in virology, cancer biology, molecular biology, genomics, immunology, and microbiology will be considered. Position is available immediately.

The Stoddard Institute is a not-for-profit, academic research group with funding from the Central Iowa Health System, the Department of Defense, the National Institutes of Health, and the American Cancer Society. Laboratories provide state-of-the-art equipment, animal facility, and administrative and technical support. You can learn more by visiting **website: http://www.hgtri.org.** Applicants should submit curriculum vitae, an outline of current and future research interests, and three references to: **Charles J. Link Jr., M.D., Director, Stoddard Cancer Research Institute, Central Iowa Health System, 1313 High Street, Suite 111, Des Moines, IA 50309.** *Equal Opportunity Employer/Affirmative Action/Minorities/Female/Disabled/Veterans.*

POSITIONS IN NMR AND STRUCTURAL BIOLOGY
University of Louisville

The University of Louisville School of Medicine Brown Cancer Center invites applications for an NMR Spectroscopist/Manager at the new NMR center housed in a purpose-built facility. A state-of-the-art, four-channel 14.1T spectrometer is to be installed early 2002. Funds are expected for an 18.8T spectrometer. The candidate must have a Ph.D. in a relevant discipline. The Spectroscopist's duties will include maintenance of the spectrometers, implementation and development of the NMR experiments, and collaboration with and training NMR users from the Brown Cancer Center. The applicant should have postdoctoral experience in modern multidimensional NMR, NMR (UNIX-based) system administration, and in trouble-shooting instrumentation. Additional training will be supplied where necessary.

Applicants should submit curriculum vitae; outline of experience and interests; and names, addresses, and e-mail addresses of three references to: **Andrew N. Lane, Ph.D., Director Structural Biology, Brown Cancer Center, 529 South Jackson Street, Louisville, KY 40202**. For further information, **e-mail: anlane01@gwise.louisville.edu**. Applications should be received by January 10, 2002, for full consideration. *The University of Louisville is an Affirmative Action/Equal Opportunity Employer. Women and minorities are particularly encouraged to apply.*

REVIEW MEDICAL OFFICERS INFECTIOUS DISEASES
Board Certified/Board Eligible

Infectious diseases (BC/BE), Rockville, Maryland. U.S. Food and Drug Administration, Office of Vaccines Research and Review, is recruiting Review Medical Officers. Positions offer opportunity to provide scientific and regulatory guidance to sponsors at all phases of drug development from clinical trial design to evaluation of clinical trial data submitted for approval. Review areas include viral vaccines, bacterial vaccines, and related products. Multidisciplinary team approach facilitates interaction with a wide range of scientific disciplines. Basic qualification is a Doctor of Medicine or Doctor of Osteopathy. Board certified/Board eligible in adult/pediatric infectious diseases is highly desirable. The Civic Service salary for Physicians (regulatory) is GS–14 ($79,060 to $99,391) plus an additional physician comparability allowance (PCA) of $14,000 to $16,000 may also be paid. The candidate may also be eligible for the PHS Commissioned Corp. Please mail curriculum vitae to: **Kerin Denault, 1401 Rockville Pike, Suite 370N, HFM–475, Rockville, MD 20852-1448**. *FDA is an Equal Opportunity Employer. This agency provides reasonable accommodations to applicants with disabilities.*

SCIENTIFIC EDITOR

Elsevier Science/Academic Press seeks a Scientific Editor to join the journal group in New York City that publishes *Molecular Therapy* and *Genomics*.

The individual will be primarily responsible for the content of *Genomics*, overseeing the review process, making decisions on submitted manuscripts, and some writing.* The successful applicant will also assist with *Molecular Therapy* manuscripts. Some supervision of editorial and production staff required. Significant growth potential in this position.

The ideal candidate has: a Doctorate in genetics/genomics or a related discipline, published research experience, good analytical and writing skills, significant interpersonal skills, and the ability to work under deadline pressure and to juggle several projects. Previous scientific editorial experience is desirable. This position is based in the New York City office of Academic Press/Elsevier Science.

Please send curriculum vitae, a brief writing sample (e.g., a commentary on a recent paper in any genomics journal), and salary history/requirements to: **Elsevier Science/AP, Attention: F. Steele, 15 East 26th Street, 15th Floor, New York, NY 10010. E-mail: sdhumanresources@harcourt.com.**

STAFF SCIENTIST

At Applied Biosystems, we're committed to ensuring that biological information plays a pivotal role in the future of medicine and the well-being of humankind. From genomic information to instrument systems, we enable science for life. We are currently looking for a Staff Scientist to join us at our headquarters in South San Francisco, California. This position is responsible for developing labeling methods, modifying hybridization reagents for microarray devices, and investigating oligonucleotide and surface chemistries to develop optimal bioconjugation methods. In addition, the selected individual establishes the optimum combination of substrate, conjugation method, and chemiluminescence activation chemistry as well as handling QC bioconjugation methods during scale-up and production of microarray devices. Position requires a Ph.D. in organic chemistry and more than six years of experience in nucleoside or peptide chemistry (or equivalent). Must have strong presentation, communication, quantitative, and computer skills. Experience with the high-throughput processes of automated biological and/or biochemical laboratory environments is essential. Qualified applicants should also function well in a multidisciplinary team environment. Familiarity with relational databases would be advantageous. Interested candidates should submit their résumé to: **Applied Biosystems, Attention: Human Resources/HFUER, 850 Lincoln Centre Drive, Foster City, CA 94404. E-mail: fuernkha@appliedbiosystems.com**. Additional information is available at **website: http://www.abcareers.com**. *Applied Biosystems is an Equal Opportunity Employer and welcomes diversity in the workplace.*

MOLECULAR/QUANTITATIVE GENETICIST

The Oceanic Institute, a National Center for Applied Aquaculture and Biotechnology in Waimanalo, Hawaii, is seeking applicants for a **FULL-TIME POSITION** in molecular/quantitative genetics. Position requires a Ph.D. with a strong background in applying molecular tools to selective breeding programs including the use of ESTs, microsatellites, RAPDs, etc. Candidates should have a strong background in quantitative genetics and fluency with programs using BLUP and REML models. The successful candidate will be responsible for developing comprehensive and competitive breeding programs for all marine shrimp species at the Waimanalo facility as well as remote facilities on an as-needed basis and may develop breeding programs for other marine organisms in the future. Salary for each position is consistent with qualifications. *All non-U.S. applicants must have a valid passport and be eligible for a working visa.*

Position is available as soon as a suitable candidate is identified.

Please submit letter of application, curriculum vitae, and names and contact information for three or more professional references to:

The Oceanic Institute
Attention: Human Resources
41-202 Kalanianaole Highway
Waimanalo, HI 96795 U.S.A.

Additional information about the Oceanic Institute can be found at **website: http://www.oceanicinstitute.org**. *The Oceanic Institute is an Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP in the section of Atherosclerosis, Department of Medicine, Baylor College of Medicine. Qualified applicants should have a Ph.D. or M.D. and experience in molecular biology with an interest in lipoproteins, inflammation, and vascular biology. Highly competitive salary will be offered and is negotiable depending upon experience. Eligibility for NIH training grant position. *U.S. citizen or resident preferred but exceptional applicants without U.S. citizenship or resident status will be considered.* Reply with curriculum vitae and three references to: **Christie M. Ballantyne, M.D., FACC, Professor, 6565 Fannin, MS A601, Houston, TX 77030. E-mail: cmb@bcm.tmc.edu**. *Baylor College of Medicine is an Equal Opportunity/Equal Access/Affirmative Action Employer.*

Neuroscientists, Montreal Neurological Institute

The Montreal Neurological Institute (MNI) at McGill University is seeking to recruit 2-3 neuroscientists to tenured or tenure-track positions. One position is for an outstanding individual to serve as the Scientific Director of the Brain Tumour Research Centre, a newly completed 26,000 sq. ft. addition to the MNI. For all of the positions, candidates are being sought who use modern cellular, molecular and/or genetic techniques. The primary criteria will be research excellence and potential for scientific achievement. The MNI has an outstanding academic environment and there is great potential for collaborative research between basic and clinical neuroscientists in many areas. Laboratory space is new and exceptionally well equipped. Salaries and start-up packages are competitive.

Montreal is a cosmopolitan, bilingual and affordable city known for its high quality of life. Applications should be sent to: **Dr. John A. Robson, Montreal Neurological Institute, 3801 University Street, Montreal Quebec, Canada, H3A 2B4.** The deadline for receipt of applications is February 28, 2002.

In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. McGill University is committed to equity in employment.

Postdoctoral Fellow

MOUNT SINAI SCHOOL OF MEDICINE

Post-doctoral fellow with training in cell/molecular biology to work on NIH-funded projects in atherosclerosis and lipoprotein metabolism. Studies from cell-free systems to transgenic/KO models are available, with an emphasis on molecular mechanisms.

Send CV and names of 3 references to: **Dr. Edward A. Fisher, Professor and Director of Lipoprotein Research, Cardiovascular Institute, Mount Sinai School of Medicine, One Gustave L. Levy Place, Box 1269, New York, NY 10029. E-mail: edward.fisher@mssm.edu.** EOE.

ANNOUNCEMENTS

FUNDING OPPORTUNITY

James S.McDonnell Foundation

21st Century Science Initiative-2002
Application Deadline: March 15

The James S. McDonnell Foundation announces new program descriptions and application guidelines for ***The 21st Century Science Initiative*** **funding research** in three topic areas-Brain Cancer; Bridging Brain, Mind, and Behavior; and Studying Complex Systems. The Foundation supports investigator-initiated research and collaborative projects where the results are likely to advance the current state of knowledge.

CONTACT INFORMATION: **Program information and all applications and proposal preparation instructions are available at:**

www.jsmf.org.

No geographic restrictions, international applications are encouraged.

CALL FOR PAPERS

Presented by... University of Massachusetts

The 18th Annual International Conference on Contaminated Soils, Sediments and Water

October 21-24, 2002
University of Massachusetts at Amherst

GENERAL TOPICS

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SPECIAL TOPICS

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For further Information and abstract submission please contact
Denise Leonard
Dept of Environmental Health Sciences
N344 Morrill, University of Massachusetts
Amherst, MA 01003
Phone: (413) 545-1239 • FAX: (413) 545-4692
dleonard@schoolph.umass.edu

Conference Co-Directors: Paul Kostecki, Ph.D. • Edward J. Calabrese, Ph.D. • Clifford Brull, Ph.D. • Jack Archer, J.D., LI.M. • Brian J. Rothschild, Ph.D.

Submissions Deadline: February 15, 2002

CHIEF, WATER QUALITY AND CONTAMINANT MODELING BRANCH, Environmental Processes and Engineering Division, Environmental Laboratory (EL), U.S. Army Engineer Research and Development Center (ERDC), Vicksburg, Mississippi. Starting salary depends on qualifications and experience but ranges from $72,969 to $94,862 per annum. The successful candidate will be responsible for directing execution of a research program of approximately $3 million to $5 million by providing vision, leadership, and direction for research and development in the missions of the Water Quality and Contaminant Modeling Branch (WQCMB). The Chief, WQCMB, conceives, develops, plans, coordinates, executes, and evaluates research and development investigations involving government and contractor scientific and engineering professionals, government and contractor technicians, and secretarial/clerical support staff. The Chief is responsible for numerical model studies, field studies, and investigations involving physical, conceptual, and analytical modeling for the purpose of simulating water quality, contaminant, and ecosystem effects resulting from engineering operations or cleanup activities. The Chief should possess extensive experience in the field of numerical modeling of environmental processes from the research and development perspective. A Ph.D. or equivalent in an appropriate field of study is preferred or an M.S. with at least two years of specialized experience. Application procedures can be obtained by request (letter, telephone, or FAX) from: **Directorate of Human Resources Management, U.S. Army Corps of Engineers, Attention: CEMVD-HR/Ms. Colleen Hughlock, Cold Regions Research and Environmental Laboratory, 72 Lyme Road, Hanover, NH 03755-1290** (please do not mail applications to this address). **Telephone: 603-646-4132**; U.S. Office of Personnel Management **website: http://www.usajobs.opm.gov.** Applications deadline is 20 February 2002. *The U.S. Army Engineer Research and Development Center is an Equal Employment Opportunity/Affirmative Action Employer.*

REGULATORY HEALTH PROJECT COORDINATOR/MANAGER
Positions in Vaccines
U.S. Food and Drug Administration (FDA)
Rockville, Maryland

Regulatory Health Project Coordinator/Manager positions are available in the Office of Vaccines Research and Review, Center for Biologics Evaluation and Research, FDA, for persons with a B.S. or Master's degree in biology, molecular microbiology, immunology, chemistry, or a related field. Registered nurses (RN) are also eligible. The individual will manage projects for investigational viral and/or bacterial vaccine applications. The candidate should have strong organizational and communication skills. *Requirements include U.S. citizenship.* The positions range from GS–12 (starting at $53,156) to GS–13 (starting at $63,211). The candidate may also be eligible for the PHS Commissioned Corp. Please mail curriculum vitae to: **Kerin Denault, Office of Vaccines Research and Review, 1401 Rockville Pike, Suite 370N/HFM–475, Rockville, MD 20852-1448. Telephone: 301-827-3070; FAX: 301-827-3532.** *FDA is an Equal Opportunity Employer.*

MEDICAL WRITERS

Leading medical education company based in New York City has an immediate opening for **ASSISTANT** and **ASSOCIATE MEDICAL WRITERS** (salary range: $55,000 to $85,000). Familiarity with development of biological/biomedical sciences manuscripts required. Ph.D. or advanced degree in biological sciences preferred. The ability to write clearly and concisely is essential. You will be expected to work on your own initiative and interface with Physicians, clients, and Program Directors. Some travel may be required. Please send résumé to: **Harrison & Star Business Group, Human Resources Department, 10th Floor, 16 West 22nd Street, New York, NY 10010. FAX: 212-822-6693; e-mail: jobs@hsci.com (Attention: Medical Writers)**

POSITIONS OPEN

CHIEF, ENVIRONMENTAL ENGINEERING BRANCH, Environmental Processes and Engineering Division, Environmental Laboratory (EL), U.S. Army Engineer Research and Development Center (ERDC), Vicksburg, Mississippi. Starting salary depends on qualifications and experience but ranges from $72,969 to $94,862 per annum. The successful candidate will be responsible for directing execution of a research program of approximately $3 to $5 million by providing vision, leadership, and direction for research and development in the missions of the Environmental Engineering Branch (EEB). The Chief, EEB, conceives, develops, plans, coordinates, executes, and evaluates research and development investigations involving government and contractor scientific and engineering professionals, government and contractor technicians, and secretarial/clerical support staff. The Chief is responsible for laboratory experiments, field studies, and investigations involving physical, conceptual, and analytical modeling for the purpose of developing remediation tools and techniques for contaminated soil, groundwater, and sediment. The Chief should posses extensive experience in the field of environmental engineering of remediation processes from the research and development perspective. A Ph.D. or equivalent in an appropriate field of study is preferred or an M.S. with at least two years of specialized experience. Application procedures can be obtained by request (letter, telephone, or FAX) from: **Directorate of Human Resources Management, U.S. Army Corps of Engineers, Attention: CEMVD-HR/Ms. Colleen Hughlock, Cold Regions Research and Environmental Laboratory, 72 Lyme Road, Hanover, NH 03755-1290** (please do not mail applications to this address). **Telephone: 603-646-4132**; U.S. Office of Personnel Management **website: http://www.usajobs.opm.gov.** Applications deadline is 20 February 2002. *The U.S. Army Engineer Research and Development Center is an Equal Employment Opportunity/Affirmative Action Employer.*

The University of New Mexico School of Medicine invites applications for a **SENIOR RESEARCH SCIENTIST II** position in genomics/biocomputing at a newly established biocomputing facility. This Ph.D. staff person will participate in studies which involve analysis of gene microchip data, database formation, and pathway analysis. For specific information on requirements and to apply, refer to the vacancy announcement at **website: http://www.unm.edu/~hrnet/jobs/h31702.htm** or **Telephone: 505-272-6445**. For program information, contact: **Richard Larson; Telephone: 505-272-9762; e-mail: rlarson@salud.unm.edu.** Applications accepted until 5 p.m. MST on February 8, 2002. This vacancy may be closed prior to the advertised closing date. Indicate the requisition number (H31702) and job title on all correspondence. *Equal Employment Opportunity/Affirmative Action.*

ASSAY DEVELOPER POSITIONS

Develop, refine, and reconfigure a variety of enzymatic, binding, and cell-based assays for use in proprietary ultrahigh-throughput microfabricated plate. This Scientist should be knowledgeable in enzyme kinetics, protein purification, and modification and will be working closely with an engineering team to push the boundaries of screening throughput. Industrial or drug discovery assay development experience is highly desirable. Read more about the position at **website: http://www.biotrove.com.**

Eaton Publishing seeks a full-time **ACQUISITIONS EDITOR** to acquire content for our journal publications and book program. The Acquisition Editor will solicit editorial, review submitted manuscripts, and work with authors during development of projects to ensure that manuscripts are delivered in a timely manner, meeting publishing and market requirements, and are acceptable in form and content. Ph.D. in a biomedical science discipline rquired. Please submit salary requirements and résumé to **e-mail: christine@biotechniques.com** or **FAX: 508-616-2930.**

POSITIONS OPEN

The University of Chicago Argonne National Laboratory Consortium for Nanoscience Research has two openings for **POSTDOCTORAL RESEARCH FELLOWS** to join its research theme on nano-bio composite structures. The research aims to exploit molecular recognition properties of biological macromolecules in the assembly of nanoscale materials domains into defined architectures and in the targeting of their delivery to selected intracellular sites. We are seeking applicants who have demonstrated high levels of creativity and productivity in interactive research and with specific expertise in nucleic acid biochemistry, molecular biophysics, or synthetic chemistry. The appointees will join a larger cross-disciplinary research group that includes research themes in quantum materials, adaptive nanoscale self-assembly, and nanophotonics. Research Fellows are expected to take advantage of facilities and resources both at the University of Chicago and at Argonne National Laboratory. Salaries are highly competitive. Please send an application by February 1, 2002, to either: **Gayle Woloschak, Biosciences Division, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, IL 60439 (e-mail: woloschak@anl.gov)** or **Laurens Mets, Department of Molecular Genetics and Cell Biology, The University of Chicago, 1103 East 57th Street, Chicago, IL 60637 (e-mail: mets@uchicago.edu).**

POSTDOCTORAL POSITIONS (NIH-funded) available immediately to study mitochondrial basis of neurodegeneration in Friedreich's ataxia (as in *Human Molecular Genetics* **10**:2099–2107, 2001, and references therein) and in mitochondrial genetic disease. Experience in mitochondrial measurements (oxygen consumption, membrane potential, mitochondrial enzyme activities) and molecular techniques (microarray, antisense, transfection, RTPCR, Western); English proficiency; and previous experience with neuronal culture preferred. Ph.D. in biochemistry, molecular biology, or genetics required. Salary: approximately $33,000 to $40,000 per year (commensurate with experience) plus benefits. Send curriculum vitae and names of three references to: **G. A. Cortopassi, V.M., Molecular Biosciences, University of California, 1 Shields Avenue, Davis, CA 95616. E-mail: gacortopassi@ucdavis.edu; FAX: 530-754-9342; website: http://cortopassilab.ucdavis.edu.** *University of California Davis is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL ASSOCIATES
Proteomics Research

The Proteomics Laboratory at The University of Texas Southwestern Medical Center in Dallas, Texas, is recruiting enthusiastic Scientists to take key roles in developing and implementing proteomics technologies for large-scale profiling of protein phosphorylations in signal transduction. Candidates should have a Ph.D. degree in biochemistry or molecular biology. Research experience in signal transduction is an advantage but not required.

If you are interested, please FAX your curriculum vitae and the names of three references to: **Yingming Zhao, Ph.D., Department of Biochemistry, RM K3.500, UT Southwestern Medical Center, 5323 Harry Hines Boulevard, Dallas, TX 75390-9038. FAX: 214-648-8856; e-mail: yzhao@biochem.swmed.edu.**

UT Southwestern is an Equal Opportunity Employer.

POSTDOCTORAL POSITIONS are available to study the molecular mechanisms of host-pathogen interactions and development pathogen detection system. Areas of research include (1) *Pseudomonas aeruginosa* Type III secretion-mediated host cell apoptosis and mechanisms of the bacterial multidrug resistance, (2) *Agrobacterium tumefaciens vir* gene regulation and T-DNA transfer into mammaliam cells, and (3) development of DNA-based rapid pathogen detection system using microbial genome database. Previous experience in molecular biology or related fields is highly preferred. Please submit your curriculum vitae and three references to: **Shouguang Jin, Department of Molecular Genetics and Microbiology, Box 100266, University of Florida, Gainesville, FL 32610. E-mail: sjin@mgm.ufl.edu.**

GRANTS

WORKSHOPS

Announcing an Intensive Summer Workshop at the Santa Fe Institute:

MODELING AND SIMULATING BIOCOMPLEXITY FOR MATHEMATICIANS AND PHYSICISTS

Dates: August 4 – 9, 2002 • **Location:** Santa Fe Institute, Santa Fe, New Mexico, USA • **Housing:** St. John's College, Santa Fe, NM • Coordinated by Lee Segel, Weizmann Institute of Science

DESCRIPTION: This workshop is designed for Ph.D. students, post-doctoral students, and young faculty members, in the mathematical sciences and physics, who are interested in applying their knowledge in the biological sciences. Preference will be given to those for whom this experience is their first, or one of their first, in theoretical biology. Mathematicians should have had some experience in applying mathematics to some other area; please indicate this experience in your application letter. We expect about 30 carefully selected participants to attend, and about 10 outstanding lecturers to present.

COSTS: No tuition is charged. Housing and meals will be provided, at no cost to participants, at St. John's College in Santa Fe, NM. Housing will be in single dormitory rooms with shared bathrooms. Telephone and computer network connectors will be available. Travel funds are provided if funding is not available from other sources.

HOW TO APPLY: You may submit your application online at http://www.santafe.edu/modeling2002/, or via postal mail according to the following instructions: Send a current resume with publications list (if any), statement of current research interests and why this workshop would be beneficial to you, and two letters of recommendation from scientists who know your work. Include your e-mail address and fax number. Specify whether you wish to apply for a travel scholarship. Send only complete application packages by postal mail to:

Modeling and Simulating Biocomplexity
MS SC
Santa Fe Institute
1399 Hyde Park Road
Santa Fe, New Mexico 87501 USA

Applications must be postmarked or electronically submitted by: **March 1, 2002.** For further information: http://www.santafe.edu/mathmodel/ or mathmodel@santafe.edu.

Women, minorities, and students from developing countries are encouraged to apply.

The California Institute of Technology is seeking candidates to participate in the Caltech Postdoctoral Scholars Program at JPL (NASA Jet Propulsion Laboratory). Two positions within JPL's Center for Life Detection are available with the aim of creating electrochemical and/or fluorescent biosensors for highly sensitive and specific detection of organic molecules.

Required: recent Ph.D. in physics, biophysics, physical chemistry, or a related field.

Highly desirable: experience with electrophysiology, electrochemistry, fluorescence imaging, microelectrodes, picosecond lifetime measurements, semiconductor materials and/or other techniques of biophysics or physical chemistry.

Annual starting salary for a recent Ph.D. is $45,000 and can vary somewhat according to the applicant's qualificaions. **POSTDOCTORAL SCHOLARS** positions are awarded initially for a one-year period. Appointments may be renewed in one-year increments for a maximum of two additional years.

Please send cover letter, résumé, and three references to: **Dr. Jay Nadeau, Jet Propulsion Laboratory MS 183-301, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: nadeau@mail2.jpl.nasa.gov.** *The California Institute of Technology and the Jet Propulsion Laboratory are Equal Opportunity/Affirmative Action Employers. Women, minorities, veterans, and disabled persons are encouraged to apply.*

Two NIH-funded **POSTDOCTORAL POSITIONS** available: Study cellular and molecular mechanisms of growth factor receptors in the invasive growth of colon cancer. Research conducted at University of Colorado Cancer Center and Denver Health Medical Center. Project involves how activation of receptor tyrosine kinase regulates colon cancer migration, invasion, and metastasis. Targeted expression of receptor mutant in transgenic mouse model developed for experiments. Must be Scientist dedicated to biomedical research with solid background in tumor biology and molecular biology and ability to work independently. Candidates with recent Ph.D. and or M.D. degree and demonstrated experience in techniques including protein biochemistry, signaling transduction and invasive assays are encouraged to apply. Please send curriculum vitae, a brief description of research accomplishments and interests, and three references to: **Dr. Ming-Hai Wang, M.D., Ph.D., Department of Medicine, UCHSC/Denver Health Medical Center, 777 Bannock Street, Mail 4000, Denver, CO 80204, U.S.A.**

THREE RESEARCH ASSISTANT/ POSTDOCTORAL RESEARCH POSITIONS
Department of Physiology and Pharmacology
The CUNY Medical School/Sophie Davis School of Biomedical Education

Grant-related research in molecular neurobiology, histochemistry, or neurochemistry aimed at understanding G protein-coupled receptor-activated signaling pathways. Ph.D. in neurobiology, neuroscience, pharmacology, or biochemistry required. Salary range: $30,000 to $45,000 per annum (commensurate with qualifications) plus generous benefits. Details at **website: http://www.ccny.cuny.edu/positions**. Application review begins immediately. Submit curriculum vitae and names, addresses, and telephone numbers of three professional references to: **Ms. M. Velazquez, Department of Physiology and Pharmacology, CUNY Medical School, 138th Street at Convent Avenue, New York, NY 10031.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION
University of Colorado Health Science Center

Position immediately available in the molecular mechanisms of cardiac-specific gene regulation with a specific focus on the role of transcriptional repressors in cytokine-induced myocardial pathology. Experience required: basic molecular techniques and evaluation of transgenics. Send curriculum vitae, research interests, and names of three references to: **Carlin Long, M.D., Chief of Cardiology, Denver Health Medical Center; e-mail: clong@dhha.org.**

The University of Colorado Health Science Center is committed to Equal Opportunity and Affirmative Action.

POSITIONS OPEN

POSTDOCTORAL POSITION
Chemistry Division
Argonne National Laboratory

A Postdoctoral Research position is open in the Photosynthesis Group, Chemistry Division, Argonne National Laboratory, to work on a multidisciplinary research project that investigates fundamental mechanisms for creating new reactive materials based upon integration of inorganic photocatalysts and biological molecules (DNA or protein). Work will feature investigation of chemical modification and self-directed assembly strategies and will use a combination of physical techniques for structure and function analyses. Unique opportunities exist for physical characterization including transient optical and electron spin resonance spectroscopies; synchroton X-ray spectroscopy and diffraction/scattering at the Advanced Photon Source; and nanoscale imaging (e.g., AFM, EM, X-ray). Individuals are sought with a Ph.D. in chemical, physical chemistry, or biophysical sciences. In particular, individuals with expertise in the synthesis and physical chemistry of biopolymers or in the use of X-ray diffraction/scattering are encouraged to apply.

Candidates must have received their Ph.D. degree not more than two years prior to the start date of the appointment. Qualified applicants are invited to send curriculum vitae, publication list, and contact information for three references via e-mail (for immediate consideration) or FAX to: **Susan Walker, Argonne National Laboratory, Box CHM-302831-43; e-mail: employment@anl.gov; FAX: 630-252-9388.** For additional information or to submit your résumé electronically, please visit our **website: http://www.hr.anl.gov/employment/employment.htm.**

Argonne National Laboratory is an Equal Opportunity Employer.

MOLECULAR VIROLOGY

One **POSTDOCTORAL FELLOW** position is available immediately to study regulated viral RNA splicing and protein-RNA interactions of Kaposi's sarcoma-associated herpesvirus. The applicant must have a Ph.D. or M.D. and no more than five years of postdoctoral experience. Previous experience in molecular virology, biochemistry, or molecular biology is strongly required. Experience in RNA-protein interaction or another RNA processing field is a plus. Appointment duration for these positions is for up to five years. The Postdoctoral Fellow salary range is $32,004 to $51,877 commensurate with experience. To apply, please submit a cover letter, your curriculum vitae, bibliography, and names of three references to: **Dr. Zhi-Ming Zheng, NIH/NCI/HAMB, 10/10S255, MSC 1868, Room 10S255, 9000 Rockville Pike, Bethesda, MD 20892-1868. Telephone: 301-594-1382; FAX: 301-480-8250; e-mail: zhengt@exchange.nih.gov.** *The National Cancer Institute is an Equal Employment Opportunity and Affirmative Action Employer that values and fosters diversity throughout the entire organization.*

POSTDOCTORAL POSITION
LYMPHOMA PROGRAM
Dana-Farber Cancer Institute
Harvard Medical School

A Postdoctoral position is available immediately to study the molecular pathogenesis of diffuse large B cell lymphoma (DLBCL) and the genetic basis of newly identified discrete DLBCL subsets (*Nat. Med.*, in press, January 2002; *Blood* **96**:4308, 2000). The applicant will work with an expanding multidisciplinary team that includes basic lymphoma Biologists, Bioinformatics Specialists, and Hematopathologists. The successful candidate must have a strong background in normal and/or malignant B cell biology and a minimum of three years of laboratory experience. Additional experience with gene expression profiling desirable.

Send curriculum vitae, reprints, and three letters of recommendation to: **Dr. Margaret Shipp, Lymphoma Program Director, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115. E-mail: margaret_shipp@dfci.harvard.edu.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS AVAILABLE
Center for Cardiovascular Sciences
Albany Medical College
Albany, New York

Job description: One Electrophysiologist position and one Molecular Biologist Postdoctoral Fellow/Research Associate position are available to study the cellular and molecular processes underlying regulation of calcium release and calcium-activated and calcium-permeable ion channels as well as related physiological functions in vascular and other smooth muscles. Various patch clamp, calcium imaging, confocal microscopic, biochemical, and genetic manipulation (e.g., gene knockout and overexpression) methods will be utilized in these research projects funded by NIH, American Heart Association, and American Thoracic Society.

Job requirements: Candidates who apply for the Electrophysiologist position should have at least one year of training in patch clamp techniques. Experience in calcium imaging and/or confocal microscopy is a plus. For the Molecular Biologist position, applicants should have good experience in molecular biology. Research background in making transgenic and/or knockout mice is preferable.

Salary: Annual salary is $28,000 or more (based on training and experience) plus generous fringe benefits. Starting date: flexible.

To apply: If interested, please send an application letter and curriculum vitae to: **Dr. Yong-Xiao Wang, Associate Professor, Center for Cardiovascular Sciences, Albany Medical College, 47 New Scotland Avenue, Albany, NY 12208-3479. E-mail: wangy@mail.amc.edu; Telephone: 518-262-9506; FAX: 518-262-8101.**

Immediate opening for a **POSTDOCTORAL POSITION** to study the biochemical and cellular functions of DNA repair machinery in humans. Strong background in nucleic acid biochemistry and molecular biology is essential. Experience in protein purification and FRET is preferred. Competitive salary and benefits. Please send curriculum vitae, a brief statement of past research, and names of three references to: **Dr. Ravindra Gupta, University at Albany, State University of New York, Department of Biological Sciences, 1400 Washington Avenue, Albany, NY 12222. E-mail: ravindra@albany.edu.** Position contingent upon continued funding. *The Research Foundation of SUNY is an Equal Opportunity/Affirmative Action/Immigration Reform and Control Act/Americans With Disabilities Act Employer.*

RESEARCH POSITION: A POSTDOCTORAL POSITION is available to study the molecular basis of cardiovascular diseases. Future promotion to a research faculty position (nontenure, assistant in) is highly possible based on the accomplishment in the first two years. Ph.D. or/and M.D. Prior experience in at least two of the following is required: molecular biology, gene expression profiling, gene therapy, or cardiovascular physiology. Send curriculum vitae and three references to: **Dr. Zhongjie Sun, Departments of Medicine and Functional Genomics, Box 100274, College of Medicine, University of Florida, Gainesville, FL 32610-0274. E-mail: zsun@phys.med.ufl.edu.**

A POSTDOCTORAL RESEARCH SCHOLAR position is available to investigate the conformation of DNA restriction fragments in solution using the technique of transient electric birefringence. A background in chemistry, molecular biophysics, or engineering is required, along with experience in transient electric birefringence. Please send curriculum vitae along with the names and contact information for three references to: **Dr. Nancy Stellwagen, Department of Biochemistry, University of Iowa, Iowa City, IA 52242. FAX: 319-335-9570; e-mail: nancy-stellwagen@uiowa.edu.** *The University of Iowa is an Equal Opportunity/Affirmative Action Employer*

SYMPOSIUMS

THE NEW YORK ACADEMY OF MEDICINE - 2002 BASIC SCIENCE SYMPOSIUM

CELL AND TISSUE ENGINEERING

Monday, March 11, 2002, 8:00am to 6:00pm
Tuesday, March 12, 2002, 8:30am to 12:30pm

Tissue engineering continues to hold exciting promise in regenerative medicine, and recent advances in stem cell technology further accentuates the potential of this field. As the prospect of treating different tissues in vitro and in vivo moves toward reality, the need to better understand the process increases. With such insight, optimization of the properties of the engineered tissues could ensure. This symposium brings together the leading researchers in the field addressing the fundamental effectors of tissue development and maturation: cell source, cell-substrate interaction, growth factor microenvironment, and biomechanical stimulus.

Session 1: Effectors of Tissue Engineering: Cell Source
John Gearhart, M.Sc., Ph.D., Johns Hopkins University
John W. McDonald III, M.D., Ph.D., Washington University
Catherine M. Verfaillie, M.D., University of Minnesota
Curt I. Civin, M.D., Johns Hopkins University
Marc H. Hedrick, M.D., UCLA
Sean J. Morrison, Ph.D., University of Michigan

Session 2: Effectors of Tissue Engineering: Cell Surface Interaction
Wolfgang Knoll, Ph.D., Max-Planck Institute for Polymer Research
Christopher S. Chen, M.D., Ph.D., Johns Hopkins University
Jennifer L. West, Ph.D., Rice University

Session 3: Effectors of Tissue Engineering: Growth Factor Microenviroment
A. Hari Reddi, Ph.D., University of California, Davis
Mark W. Saltzman, Ph.D., Cornell University
Michael Sefton, Sc.D., University of Toronto

Session 4: Effectors of Tissue Engineering: Biomechanical Stimulus
Steven A. Goldstein, Ph.D., University of Michigan
Farshid Guilak, Ph.D., Duke University
Shu Chien, M.D., Ph.D., University of California

Symposium Chair:
Kam W. Leong, Ph.D., Johns Hopkins University

Special Lecture: Ethics and Health Policy
Harold T. Shapiro, Ph.D., Princeton University

Meeting Location:
The New York Academy of Medicine
1216 Fifth Avenue
New York, New York 10029
For more information please contact Janice Flecha, Program Coordinator, at 212-822-7204, fax 212-822-7338, or obtain the program online at http://www.nyam.org/events/2002sciencesymposium.shtml

GRANTS

Sustainable Forestry and Biodiversity: Request for Proposals

The National Commission for Science on Sustainable Forestry (NCSSF) is soliciting Letters of Intent (**Due February 4, 2002**) for our competitive awards process. NCSSF will fund ten specific projects in 2002, including research, information syntheses, assessments, tool development and a survey of practices. ***NCSSF's mission is to improve the scientific basis for the design, conduct and evaluation of sustainable forestry practices in the U.S. NCSSF work must be both of the highest technical quality and directly relevant to the needs of forest managers and practitioners.*** Based on the Letters of Intent, three candidates for each project will be invited to submit proposals for peer review. Awards are expected by June '02. Further information, project descriptions and instructions for submitting Letters of Intent are available at:

www.ncssf.org

NCSSF: a multi-stakeholder non-profit NGO.

NATIONAL® CANCER INSTITUTE

Bridge the Gap Between Discovery and Clinical Testing

Access the National Cancer Institute's (NCI) vast resources free of charge to help move therapeutic agents for cancer to the clinic. The National Cancer Institute invites the submission of proposals to:

Rapid Access to Intervention Development
RAID

RAID is not a grant program. Successful applicants instead will receive products or information generated by NCI contractors to aid the applicant's development of novel therapeutics toward clinical trial. The goal of RAID is the rapid movement of novel molecules and concepts from the laboratory to the clinic for proof-of-principle clinical trials. RAID will assist investigators by providing any (or all) of the preclinical development steps that may be obstacles to clinical translation. These may include, for example, production, bulk supply, GMP manufacturing, formulation and toxicology.

- The next deadline for receipt of applications is February 1, 2002.
- Further information about this program can be found at: **http://dtp.nci.nih.gov**
- Inquiries can be made to the RAID Program Coordinator by telephone at 301-496-8720 or by e-mail at RAID@dtpax2.ncifcrf.gov.

RAID
Developmental Therapeutics Program
National Cancer Institute
6130 Executive Blvd., RM 8022
Rockville, MD 20852
Tel: 301-496-8720; Fax: 301-402-0831
raid@dtpax2.ncifcrf.gov

POSTDOCTORAL POSITIONS
Emory University School of Medicine
Atlanta, Georgia

Postdoctoral positions are available in biomedical research areas including biochemistry, cell biology, genetics, neuroscience, pharmacology, cancer biology, pathology, signal transduction, microbiology, and others. Emory provides a rich research and living environment and is in the top 20 medical schools for federal research funding. The November 2001 opening of the 325,000-square-foot Whitehead Research facility and new faculty recruitment provide for many newly available postdoctoral openings.

Unique programs that combine postdoctoral teaching experience with research training in the above areas are also available. See the website below for details.

Full employee benefits including up to 10% university retirement contribution and competitive salaries are available. The Office of Postdoctoral Education guides postdoctoral policies, services, and career workshops.

See a comprehensive listing of postdoctoral positions, links to faculty research pages, and information about postdoctoral benefits and services at **website: http://www.emory.edu/WHSC/MED/POSTDOC/postdoc_openings.html**. *The Office of Postdoctoral Education, Emory University School of Medicine, is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION
Yale University School of Medicine

We use both yeast and mammalian cells to study RNA-binding proteins that are important for RNA folding and RNP assembly. One protein under study recognizes incorrectly folded RNAs and contributes to cell survival following ultraviolet irradiation (see *Genes and Dev.* **14**:777–782; *EMBO Journal* **19**:1650–1660; *EMBO J.* **17**:7442–7453; *Cell* **89**:393–402). Candidates should possess a recent Ph.D. degree and have experience in genetics, biochemistry, or molecular biology. Please send curriculum vitae, a brief summary of research experience, and the names of three references to: **Dr. Sandra L. Wolin, Departments of Cell Biology and Molecular Biophysics and Biochemistry, Howard Hughes Medical Institute, Yale University School of Medicine, 295 Congress Avenue, New Haven, CT 06536. E-mail: sandra.wolin@yale.edu.**

POSTDOCTORAL POSITIONS: Two Postdoctoral positions are available to investigate the regulation of epithelial cell proliferation and migration. We are currently investigating Rho GTPase-mediated cell migration and cytoskeletal organization and signaling events associated with cell proliferation and apoptosis in intestinal epithelial cells. We utilize basic molecular and cellular biology techniques, which include Western blotting, *in vitro* kinase assays, etc. Experience with these types of techniques is preferred. Please send curriculum vitae and names of three references to: **Leonard R. Johnson, Ph.D., Chair, Department of Physiology, University of Tennessee Health Science Center, 894 Union Avenue, Memphis, TN 38163 U.S.A. E-mail: ljohn@physio1.utmen.edu.**

Pharmacology - Multiple Positions - Searching for 3 post-doctoral researchers with experience in any of the fields of confocal/multiphoton microscopy, electrophysiology or molecular biology. These scientists will join a research group devoted to understanding the molecular biology of neuronal functioning with particular emphasis on analysis of dendrites and axons. Pay commensurate with experience. Send résumé or curriculum vitae to the attention of: **Dr. J. Eberwine, University of Pennsylvania Pharmacology Department, 3620 Hamilton Walk-Room 37, John Morgan Building, Philadelphia, PA 19104-6084.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION

The Diabetes Research Laboratory at Simon Fraser University, Vancouver, Canada, is accepting applications for a position in the area of mathematical modeling and systems physiology. Applicants should have considerable knowledge of Type 2 diabetes and the ability to use mathematical modeling as a tool for guiding experimental research. The successful candidate will be expected to manage an existing project investigating a model-based approach to estimating the mass of pancreatic β-cells. This includes mathematical modeling, data analysis, experimental design, budget management, coordination of staff and students working on this project, and supervision of graduate and undergraduate students. Candidates will also be expected to interact with and contribute to the other projects ongoing in our laboratory (β-cell adaptation and turnover in Type 2 diabetes; relative efficacy of thiazolidinedione, biguanide, or sulfonylurea treatment at preventing/reversing Type 2 diabetes; β-cell apoptosis/macrophage clearance in Type 1 diabetes). Funding is currently available for two years. Salary is negotiable and will be based on experience. Applications should include a cover letter, curriculum vitae, and the names and addresses of three references and be sent to: **Dr. Diane T. Finegood, School of Kinesiology, Simon Fraser University, 8888 University Drive, Burnaby, British Columbia V5A 1S6 Canada. FAX: 604-291-3040; e-mail: finegood@sfu.ca.** The closing date for applications is February 15, 2002.

POSTDOCTORAL POSITION available to study sulfotransferase (SULT) pharmacogenetics at Fox Chase Cancer Center. This project is multifaceted and includes biochemical and molecular studies of mechanisms underlying variation in cellular responses to drugs and hormones associated with common SULT alleles. Cell culture models, human tissue samples, and clinical studies will be utilized to elucidate pharmacogenetic relevance of SULT alleles. Candidates should have experience with standard biochemical and/or molecular techniques and, more importantly, a strong desire to elucidate basic pharmacogenetic mechanisms. Fox Chase Cancer Center has an active postdoctoral association that includes a monthly postdoctoral seminar series, journal clubs, and an annual "postdoc day" symposium. Additionally, we offer subsidized postdoctoral housing and a superb child care facility. Interested candidates should send curriculum vitae and list of three references to: **Rebecca B. Raftogianis, Ph.D., Associate Member, Department of Pharmacology, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111. E-mail: rb_raftogianis@fccc.edu.** *Equal Opportunity Employer.*

There are currently positions open for **POSTDOCTORAL ASSOCIATES** in the laboratory of **Mark Shapiro.** Sponsored projects will initially focus on G protein- and tyrosine kinase-mediated modulation of M-type K+ currents and KCNQ K+ channels in primary neurons and heterologous expression systems. The approaches include patch clamp electrophysiology, molecular biology, biochemistry, and Ca2+ imaging. Experience in electrophysiology required. Contact: **Mark S. Shapiro, Ph.D., Department of Physiology, University of Texas Health Science Center at San Antonio; Telephone: 210-567-4328; website: http://physiology.uthscsa.edu/faculty/shapiro/.** *The UTHSCSA is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION
University of California San Francisco

Position available in the Laboratory of Molecular Endocrinology at the University of California, San Francisco, studying signal transduction involved in steroid hormone synthesis. See our **website: http://itsa.ucsf.edu/~wlmlab** for details. Send curriculum vitae and letter of interest with the names, addresses, and telephone numbers of at least three references to: **Professor Walter L. Miller, Building MR-IV, Room 209, University of California, San Francisco, San Francisco, CA 94143-0978.**

POSITIONS OPEN

NIH 2002 = [OPPORTUNITY]^N

Train at the bench, the bedside, or both. The NIH offers **POSTDOCTORAL** and **CLINICAL FELLOWSHIPS** as well as tenure-track positions.

For details, visit our website: www.training.nih.gov

NIH is dedicated to building a diverse community in its training and employment programs.

DOCTORAL AND POSTDOCTORAL FELLOWSHIPS
Tropical Botanical Medicines

Florida International University is seeking candidates for its NIH-funded tropical botanical medicine program. Five Ph.D. and two Postdoctoral positions are available beginning in 2002. Ph.D. applicants must have a strong commitment to careers in complementary and alternative medicine. Postdoctoral applicants must have a Ph.D., M.D., D.O., N.D., Pharm.D. or equivalent from an accredited institution. *Individuals appointed to the training grant must be U.S. citizens or lawfully admitted permanent residents.* For application information, contact: **Dr. Bradley C. Bennett, Director, Center for Ethnobiology and Natural Products, Department of Biological Sciences, Florida International University, Miami, FL 33199. Telephone: 305-348-3419; e-mail: cenap@fiu.edu; website: http://www.fiu.edu/orgs/cenap.** *FIU particularly is interested in underrepresented minority applicants.*

Four **POSTDOCTORAL POSITIONS** are available in plant physiology (at the Boyce Thompson Institute for Plant Research), molecular genetics (Cornell University and Oklahoma State University), and biostatistics (University of North Carolina at Chapel Hill) within a multiinstitute consortium funded by the National Science Foundation. The project involves a genomic analysis of water use efficiency in rice, tomato, and *Arabidopsis* using stable carbon isotopes, QTL analysis, NIL development, fine mapping, and comparative genomics. For project information and application details, see **website: http://isotope.bti.cornell.edu/opps.html**. Contact: **Dr. Jonathan Comstock; e-mail: jpc8@cornell.edu** with further inquiries. *All sites are Affirmative Action/Equal Opportunity Employers.*

HARVARD MEDICAL SCHOOL

POSTDOCTORAL POSITIONS are available to study cholesterol and presenilins in the pathogenesis of Alzheimer's disease using multidisciplinary methods including proteomics and transgenic approaches (*Nature Cell Biol.* **3**:905). Ph.D.s with a strong background in either molecular/cellular biology or lipid biology/biochemistry are encouraged to apply. Face-to-face interview required. Send curriculum vitae, recent reprints, and three reference letters to: **Dr. Dora Kovacs, Genetics and Aging Research Unit, Massachusetts General Hospital, Building 114, Room 3010, 114 16th Street, Charlestown, MA 02129. E-mail: kovacs@helix.mgh.harvard.edu.**

POSTDOCTORAL POSITION
BIOPHYSICAL CHEMISTRY
Princeton University

A Postdoctoral position in biophysical chemistry at Princeton University is available immediately, to carry out research in algorithm development to accelerate the discovery of bioactive molecules. Although the area of study is theoretical, the research will interface with ongoing laboratory programs. Qualified individuals may send their applications by mail to: **Professor Herschel Rabitz, Princeton University, Department of Chemistry, Princeton, NJ U.S.A. 08544. E-mail: hrabitz@princeton.edu.** Applicants should also arrange for letters of recommendation. *Princeton University is an Equal Opportunity Employer.*

POSITIONS OPEN

The Department of Clinical Pathology at The Cleveland Clinic Foundation has an immediate opening for a **PROJECT STAFF SCIENTIST** in the Molecular Diagnostics Laboratory. The laboratory is rapidly growing in the area of molecular neuropathology and is well equipped with state-of-the-art equipment such as ABI 3100 Genetic Analyzer, LightCycler, and automated FISH and ISH stainers and workstations. Responsibilities include modifications and development of new assays in the area of molecular neuropathology. Preference will be given to individuals with expertise in the use of automated instrumentation for molecular analysis and technical expertise in PCR and FISH. Minimum requirements include a Ph.D. degree in a relevant biomedical discipline or Pathologists who have completed a pathology residency. Applicants should submit their curriculum vitae, a cover letter describing their research interests, and the names of three references to: **Dr. Raymond Tubbs, Chairman, Department of Clinical Pathology/L11, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44195.**

POSTDOCTORAL POSITIONS
Institute for Human Gene Therapy
Department of Molecular and Cellular Engineering
University of Pennsylvania Health System

Positions available for Postdoctoral Fellows in the laboratory of **Dr. James M. Wilson** to study pathogenesis of cystic fibrosis, molecular virology of adenovirus, adeno-associated virus, lentivirus, immunology of gene therapy, and regulated gene expression. Please forward curriculum vitae and the names of three references to:

James M. Wilson, M.D., Ph.D.
Director, Institute for Human Gene Therapy
University of Pennsylvania Health System
Room 204, Wistar Institute
3601 Spruce Street
Philadelphia, PA 19104-4268
E-mail: wilsonjm@mail.med.upenn.edu

POSTDOCTORAL POSITION is available immediately in the Department of Neurology, Washington University School of Medicine, to study the role of the GDNF family of neurotrophic factors on motor neurons in normal and pathological conditions including mouse models of motor neuron degenerative diseases. Applicants should have Ph.D. degree; background in the neurobiology/neuroscience field; and experience in anatomical, immunohistochemical, and molecular biology techniques. Please send curriculum vitae and the names and contact information of three references to: **Dr. Alexander Parsadanian, Ph.D., Department of Neurology, Washington University School of Medicine, 660 South Euclid Avenue, Campus Box 8111, St. Louis, MO 63110. Telephone: 314-747-2107; FAX: 314-362-9462; e-mail: parsadan@neuro.wustl.edu.**

POSTDOCTORAL POSITIONS
Molecular Mechanisms of Eukaryotic Transcription
Vanderbilt University Medical Center

Two Postdoctoral positions available to examine the role of TBP, the TATA box binding protein and its associated protein factors in RNA polymerase II-mediated transcription initiation using the baker's yeast *Saccharomyces cerevisiae* system. We currently utilize a combination of biochemical, genetic, biophysical, and proteomics methods to study the regulation and interactions of these proteins with each other, DNA, and other transcription factors; details can be obtained at **website: http://www.mc.vanderbilt.edu/vumcdept/mpb/weil/weil_lab.html**. Interested parties should send curriculum vitae and names of references to: **Dr. Tony Weil, Department of Molecular Physiology and Biophysics, Vanderbilt University, School of Medicine, Nashville, TN 37232-0615. FAX: 615-322-7236.** *Vanderbilt University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

POSITIONS IN NMR AND STRUCTURAL BIOLOGY
University of Louisville

The University of Louisville School of Medicine Brown Cancer Center invites applications for a **POSTDOCTORAL FELLOW** well versed in molecular biological and protein chemical techniques with a strong interest in biophysics and NMR. The projects involve protein-DNA interactions related to DNA repair and cell-cycle regulation. The Fellow will be involved in the expression and characterization of the proteins by biophysical methods including NMR and other spectroscopic methods. Experience in spectroscopy is an advantage but training will be supplied if necessary.

Applicants should submit curriculum vitae; outline of experience and interests; and names, addresses, and e-mail addresses of three references to: **Andrew N. Lane, Ph.D., Director Structural Biology, Brown Cancer Center, 529 South Jackson Street, Louisville, KY 40202.** For further information, **e-mail: anlane01@gwise.louisville.edu.** Applications should be received by January 10, 2002, for full consideration. *The University of Louisville is an Affirmative Action/Equal Opportunity Employer. Women and minorities are particularly encouraged to apply.*

POSTDOCTORAL POSITION. Investigate the role of RhoC and other GTPases in cytoskeletal organization and cell cycle control in breast cancer. Delineate the binding sites of effectors to RhoC and produce the necessary reagents and animal models to test hypotheses regarding downstream signaling from RhoC. Test novel compounds that interfere with RhoC signaling. Applicants are expected to have a Ph.D. and/or M.D. and strong molecular and cellular biology skills. *Applicants must be permanent residents or U.S. citizens.* For more information, please see **website: http://www.med.umich.edu/intmed/hemeonc/employ/employframe.htm.** Send curriculum vitae and at least three names of references to: **Sofia D. Merajver, M.D., Ph.D., University of Michigan, Division of Hematology/Oncology, 1500 East Medical Center Drive, 7217 CCGC, Ann Arbor, MI 48109-0948.** *The University of Michigan is a Nondiscriminatory/Affirmative Action Employer.*

POSTDOCTORAL POSITION in allergic inflammation. Training grant position available. *Requires U.S. citizenship or permanent resident status.* Research involves studies in mast cell development and basal homing and recruitment in response to various inflammatory stimuli at mucosal sites. Background in immunology and experience with animals preferred. Please send curriculum vitae and references to: **Dr. M.F. Gurish, Room 624 Smith Building, One Jimmy Fund Way, Boston, MA 02115. E-mail: mgurish@rics.bwh.harvard.edu.**

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GLOBAL OPPORTUNITIES

GEORGE S. WISE FACULTY OF LIFE SCIENCES
FACULTY POSITIONS
Tel Aviv University

The George S. Wise Faculty of Life Sciences invites applications for tenure-track faculty positions in the following fields: immunology, molecular biology, bioinformatics, microbiology, plant sciences, zoology/ecology, membrane biochemistry and biotechnology, and structural biology.

Successful candidates are expected to develop an independent research program and to participate in teaching B.Sc., M.Sc., and Ph.D. students.

Please submit curriculum vitae; a list of publications; a short description of research interests and future projects; full address; and the names, addresses, and telephone numbers of three references to: **Professor Eliora Ron, Dean, The George S. Wise Faculty of Life Sciences, Tel Aviv University, Ramat Aviv, 69978 Israel. FAX: 972-3-6405146; e-mail: eliora@post.tau.ac.il.**

POSITIONS OPEN

POSTDOCTORAL POSITION available to study a novel protein inhibitor of activated Ras in yeast. Send applications (curriculum vitae, research experience, and references) to: **David E. Levin, Ph.D., Department of Biochemistry and Molecular Biology, The Johns Hopkins University, SPH, 615 North Wolfe Street, Baltimore, MD 21205. E-mail: levin@welch.jhu.edu.** *JHU is an Equal Opportunity/Affirmative Action Employer.*

COURSES

Short course on time-resolved fluorescence spectroscopy. The Center for Fluorescence Spectroscopy at the University of Maryland School of Medicine is offering a short course on "Principles and Applications of Time-Resolved Fluorescence Spectroscopy" in Baltimore, March 25–29, 2002. The course will cover basic and advanced topics in fluorometry including time- and frequency-domain measurements and Forster energy transfer. Advanced topics include chemical sensing, imaging, fiber optics, infrared fluorometry, two-photon excitation, instrumentation, confocal and multiphoton microscopy, protein fluorescence, DNA technology, high-throughput screening, metal-ligand probes, correlation spectroscopy, lanthanides, and immunoassays. Textbook, course materials, lunches, and refreshments will be provided. For further information, a schedule, and fees, please contact: **Ms. Mary Rosenfeld** or **Professor J. R. Lakowicz, CFS, Department of Biochemical and Molecular Biology, 725 West Lombard Street, Baltimore, MD 21201. Telephone: 410-706-8409; FAX: 410-706-8408; e-mail: cfs@cfs.umbi.umd.edu; website: http://cfs.umbi.umd.edu.**

GRANTS

RESEARCH GRANTS

As part of its continuing efforts to encourage the utilization of alternatives to traditional uses of laboratory animals in basic research, testing, and education, the Alternatives Research and Development Foundation is soliciting research proposals to develop such methods. Funding of up to $40,000 each is available to support individual projects at U.S. universities and research institutions. Applications from non-U.S. institutions or Investigators may be considered on a case-by-case basis. Deadline for applications is 30 April 2002 with recipients announced on 15 July 2002. For further information and application instructions, contact: **The Alternatives Research and Development Foundation, 541 West 98th Street #361, Bloomington, MN 55420. FAX: 952-949-2619; e-mail: ardfjmc@aol.com/; website: http://www.ardf-online.org.** No telephone calls, please.

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