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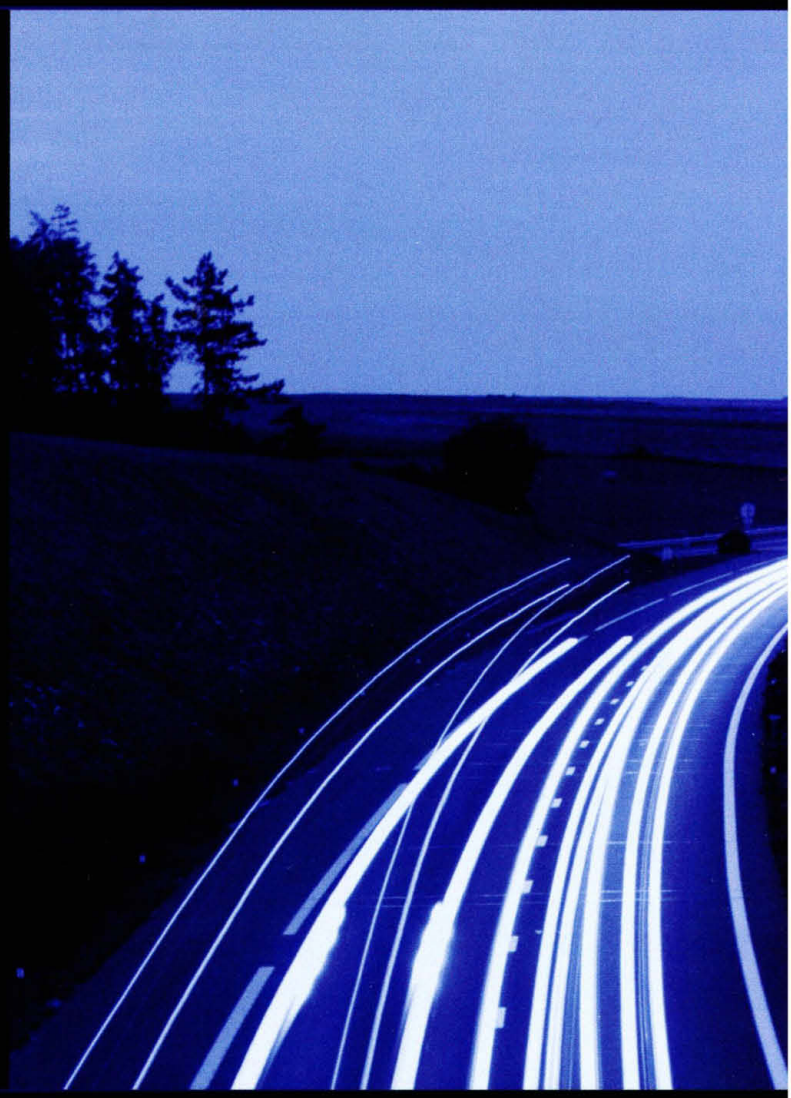

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IMPROVED PLOTTER

SigmaPlot, from SPSS Science, has a well-deserved reputation as a powerful graphing and analysis package for scientists and engineers, but, like many other specialized tools, it has been more difficult to use than less-sophisticated software. SigmaPlot 8.0, the current release of this popular program, continues the laudable trend toward improved usability noted in reviews of previous releases [see C.A. Bertrand, *Science* **289**, 1894 (2000)] while maintaining its power and versatility.

Fifteen graph types, with an average of five variations each, are provided in SigmaPlot 8.0, so it is unlikely that researchers will require graph formats that are not available. Likewise, the software provides extensive graph analysis and customization options. For example, multiple types of horizontal and vertical error bars are available, each bar with its own calculated or user-defined and potentially asymmetric values. Many prepared regression options are also available, from simple lines to multiple-parameter rational functions. Advanced users can also create custom functionality in two ways: A transform language allows one to define regressions and data transformations, whereas a VBA-like macro language facilitates creation of sophisticated automation tools. Finally, SPSS also produces specialized software add-ons for electrophysiology, enzyme kinetics, and ligand binding.

SigmaPlot 8.0's graphing capabilities are impressive, and the developers have successfully resisted the temptation to be all things to all investigators. For instance, the package offers only limited spreadsheet and statistics functionality—more than adequate for creating graphs but not designed to replace dedicated programs. Researchers should consider using a spreadsheet or database and a statistical package in addition to SigmaPlot 8.0. To facilitate this, SigmaPlot offers substantial Excel and SPSS integration as well as import options for Microsoft Access and other programs.

For many scientists, even a very basic understanding of SigmaPlot 8.0 will provide plenty of graphing muscle. For these users, programming macros and designing regressions is less important than a clear, well-documented and usable interface, which SigmaPlot 8.0 also provides. One particularly notable interface feature is the effective use of toolbars, including a new Page toolbar for graph-formatting changes. This addition, combined with the ability to edit text in the graph page (no more dialog boxes!), dramatically speeds up the process of graph creation.

Improved Excel integration further improves usability, making it easy to create high-quality SigmaPlot graphs from Excel worksheets. This can be accomplished by activating a wizard in Excel or running Excel under SigmaPlot. The wizard guides graph generation and inserts the graph into the Excel worksheet, providing a method that is easy to use and fills most common graphing needs. However, the wizard also leaves open a copy of SigmaPlot with the Excel data imported, which may confuse novice users. Also, SigmaPlot graphs generated within Excel are not updated by subsequent changes to the Excel file. The second option, running Excel from within SigmaPlot, is more attractive for those willing to learn the new environment. It relies on object linking and embedding (OLE2), a Microsoft standard that also allows objects, including graphs, to be placed easily into, and edited directly within, Microsoft Word, PowerPoint, and other compliant programs.

The notable improvements in ease of use and other functionality in this release of SigmaPlot will continue to make it more accessible to a broad range of new investigators. **—Jeremy Peirce**

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CONTINUED ON PAGE 1362

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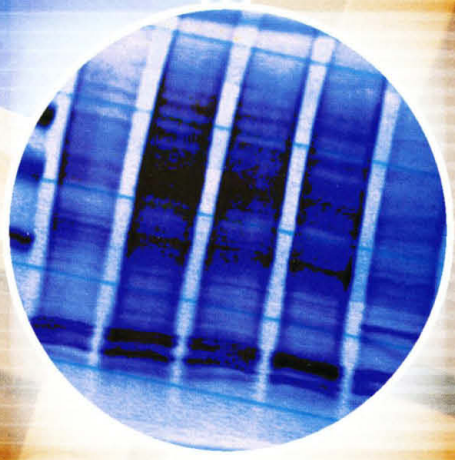

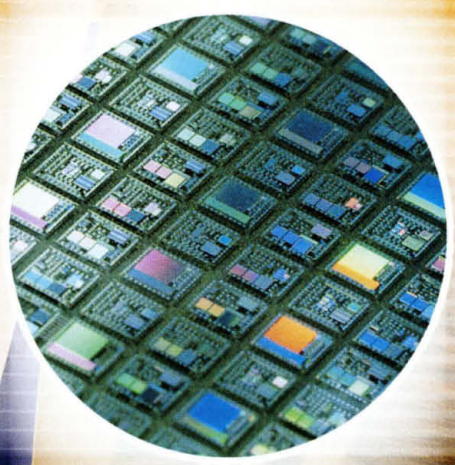

LABORATORY TECHNOLOGY TRENDS:

Life Science Research and Product Purchasing Trends

VEHICLES FOR THE 'OMICS' SUPERHIGHWAY

A survey of working scientists reveals the most significant directions of research in life science and the tools and technologies necessary to pursue the research most effectively.

BY PETER GWYNNE AND GARY HEEBNER

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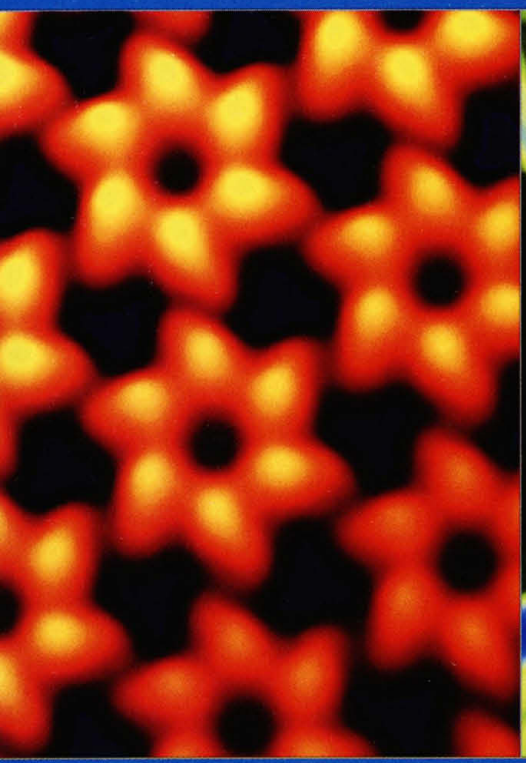

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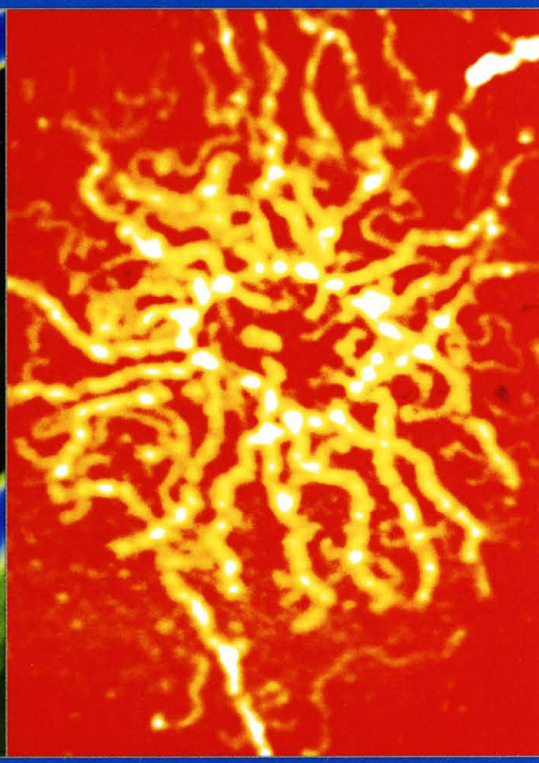

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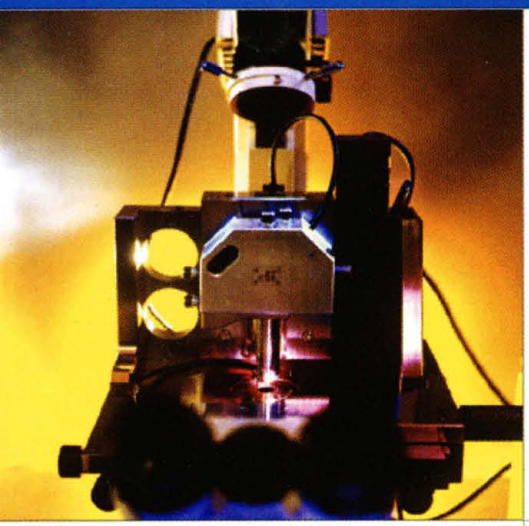

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What do life scientists regard as the most significant and exciting areas of present day research? And what tools and technologies do they need to pursue their work in those areas? A recent online survey of life scientists who are members of the **American Association for the Advancement of Science**, which publishes this magazine, provided answers to both questions. Then, to explore the issues further, we talked to representatives of companies, academic departments, and other organizations involved in the life science enterprise. The results, detailed below, provide a snapshot of the dynamic field of life science research, the priorities of its participants, and the ways in which vendors plan to satisfy the needs of researchers.

The survey, completed by more than 2,000 individuals worldwide, revealed a broad range of opinion about the most significant areas of current and future research in life science. Two themes stood out. First, genomics has grown rapidly from a fledgling subdiscipline to a huge area of present-day research that influences both scientists and vendors who supply them with reagents, tools, and technologies. But three other emerging subfields promise to set the agenda for future advances in life science: proteomics, image analysis, and bioinformatics. Of those three, survey respondents expect proteomics to exert the most impact on future research. If genomics is today's scientific superhighway, proteomics represents tomorrow's turnpike.

FROM GENOMICS TO PROTEOMICS

Observers of the life science enterprise agree that, while genomics has present priority, proteomics represents the wave of the future. "Some groups are beginning to look at shotgun sequencing approaches to microbial ecosystems. Then their attention moves naturally and quickly from genes to proteins," says Donald Kennedy, editor-in-chief of this magazine and president, emeritus of **Stanford University**. "We'll see a convergence between what we learned from genomic analysis and what we know about the networks that link gene products – the proteins that genes produce – through signaling functions within the cell."

Neil Cook, vice president of global R&D and chief scientific officer of **PerkinElmer**, puts both genomics and proteomics in the context of functional biology, sometimes known as systems biology. "Function is becoming everything," he explains. "Genomics has enabled what we are doing in proteomics. We basically view work on the human genome as a continuum from genomics to proteomics."

Scott Morrison, national director of the health sciences practice at consulting company **Ernst &Young**, looks at the issue from the point of view of drug discovery. "There has been a lot of progress and investment in genomics," he says "But it's so overloaded with data that it's not easy to see the pathway from an increase in the number of targets to an increase in the number of drugable candidates. That's why proteomics has become more prevalent. I believe that having a genomics platform and a better understanding about proteins will give you a knowledge base that will enable users eventually to turn the overload into knowledge that will feed the drug pipeline."

Indeed, vendors are adapting several approaches originally developed for genomics research to broader use. "There's a great need for genomics tools to help do proteomics," says Keld Sorensen, director of research at the biotechnology division of **Sigma-Aldrich**. "For example, we can use the polymerase chain reaction [PCR] to create mutants. Instead of having one protein you can modify one hundred sites on the protein and see what happens. We're also seeing that two-dimensional gel technology, while older than most scientists using it, is a very popular method for proteomics."

That's not all. "The key benefit of genomics is that it simply got a computer into the laboratory," Morrison points out. "That put sophisticated data handling tools into the hands of scientists, enabled research groups to share information, and improved productivity."

PRODUCTS FOR PCR

Why did many scientists who took the survey cite genomics as the most significant recent advance in their field of research? The genomes that have now been sequenced provide a strong foundation for researchers to ask fundamental questions about cellular function and the disease process.

Several research tools and techniques have played key roles in this subdiscipline. PCR, in particular, has permitted scientists to replicate quantities of DNA sufficient for biochemical analysis. Automated DNA sequencing has provided the high throughput needed to process the millions of oligonucleotides created from the many different genomes that have been sequenced to date. And gene expression systems have allowed researchers to investigate which genes are active in normal and diseased cells. "We're in the evolutionary phase of PCR," says Russell Higuchi, associate director of the department for human genetics at **Roche Molecular Systems**. "It's becoming a mature technology."

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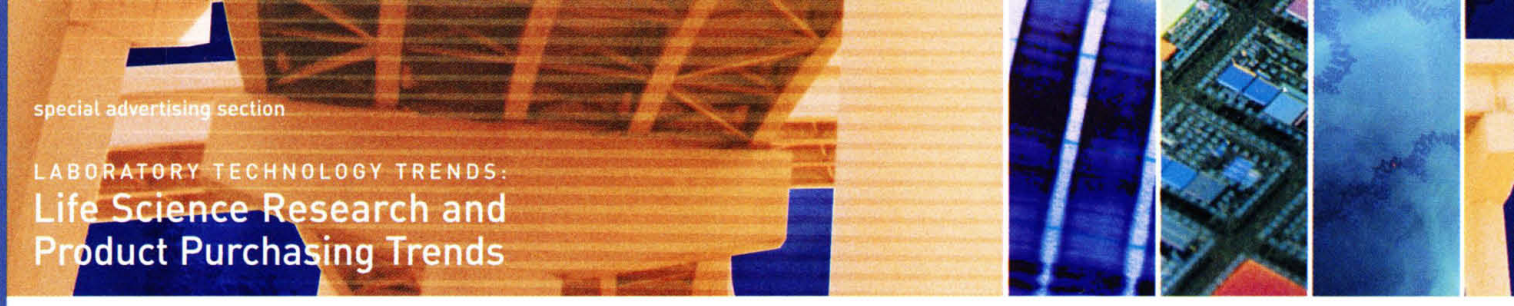

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PCR generates large numbers of copies from virtually any fragment of DNA. The key enzyme in this reaction, Taq polymerase, was first isolated from the bacterium *Thermus aquaticus* and later prepared commercially in genetically engineered bacteria. Companies such as **Applied Biosystems**, **BD Biosciences**, **Invitrogen**, **New England Biolabs**, **Promega**, **Roche Diagnostics**, and Sigma-Aldrich supply Taq polymerase and the other enzymes and reagents needed for the procedure.

Several respondents mentioned real time PCR as a significant advance in genomics, because it removes the need for manual detection procedures. "Real time PCR is probably as significant in utility as PCR itself," says Nick Roelofs, senior vice president of marketing and Asian sales at **Stratagene**. "It is probably the accepted way to go for chips such as gene expression arrays, where you have many messenger RNA targets but limited throughput in terms of samples," adds Higuchi of Roche. "Real time allows you to take the 'best' targets and validate their functionality."

Real time devices incorporate automated thermal cyclers with fluorimeters that allow scientists to quantify their PCR products after each cycle. PCR kinetics can be monitored online via a personal computer. Early instruments included the ABI Prism 7700 offered by Applied Biosystems and Roche's LightCycler. The latter is based on hybridization probes; these bring two different labels together, resulting in a resonance energy transfer when both probes bind (or hybridize) to the template DNA. "The LightCycler can do just about anything any other real time instrument can do, but it can do PCR cycles in 30 minutes rather than two hours," asserts Higuchi.

THE POLYMERASE PROBLEM

While PCR effectively makes large numbers of copies of DNA from very small amounts of starting material, it cannot directly amplify RNA. The reason: RNA can't serve as a template for DNA polymerase. Instead it must first be converted into DNA by reverse transcriptase, an enzyme commonly found in a family of RNA retroviruses. The process, known by the acronym RT-PCR, has found uses in gene expression studies, RNA sequence analysis, and diagnosis of infectious disease and genetic disorders. "We have developed our ProtoScript kit for scientists interested in determining what protein a particular gene is making," says Peter Nathan, director of marketing for New England Biolabs. "This is a first strand cDNA synthesis kit that in turn facilitates RT-PCR detection of both long and rare messages." Companies such as **Ambion**, BD Biosciences, Invitrogen, **PanVera Corporation**, and Sigma-Aldrich also offer kits for RT-PCR.

Researchers have several choices of commercial DNA polymerases for specific experiments. For while all such polymerases build on the 3'-OH end of a primer in a template based reaction, different types possess such different properties as thermal stability and fidelity. PCR systems that work well for amplification of long complementary DNA templates from RT-PCR applications are also available from commercial providers. Wayne Barnes of **Washington University, St. Louis** invented and patented long and accurate DNA polymerases. Several vendors, including **Amersham Biosciences**, **Epicentre Technologies**, New England Biolabs, Stratagene, and Sigma-Aldrich, provide systems of this type under license.

One of the most recent advances in Taq polymerase and PCR is the hot start process. This is designed to minimize any DNA polymerase activity until the system reaches the high temperature that initiates the reaction. "One of the big drives in PCR is to improve the fidelity of the copying," explains Roelofs of Stratagene. "High fidelity enzymes represent one way to solve that. The other way is hot start, whereby you decrease the probability that you'll get the primer started in the wrong spot. Recently people have modified the technique for closed tube hot starts. So it's become easy to deal with nonspecific primers." Thus Stratagene offers an enzyme that combines the fidelity of Pfu, a non-Taq enzyme, and the hot start technique. "This provides the best of both worlds," says Roelofs. Sigma-Aldrich's approach to hot starting uses two different antibodies for more complete inhibition. Applied Biosystems, Invitrogen, and Promega also offer hot start PCR systems.

SEQUENCING AND EXPRESSION

Survey participants mentioned automated DNA sequencing as a recent advance of major significance to them. The discovery of restriction enzymes and DNA polymerases around 1970 made the sequencing of DNA possible. Companies such as New England Biolabs, Promega, and Roche Diagnostics quickly produced those reagents, first as stand-alone compounds and then as kits that enabled researchers not trained in molecular biology to work in the field. For the first time, well-defined DNA fragments could be isolated from larger molecules, enabling the sequencing of small genomes.

The first automated DNA sequencers emerged in the late 1980s. They could perform gel electrophoresis and scan gels to determine the sequences of nucleotide bases without constant attention from laboratory researchers and technicians. Since then, suppliers have added several refinements that enable high throughput work. "Our DNA sequencer is extremely sensitive; it's an infrared instrument that gives you more signal to noise," says Michael Olive of **LI-COR**. "One popular application is analyzing mutations in plants and even mice to correlate the mutation with a phenotype and then go

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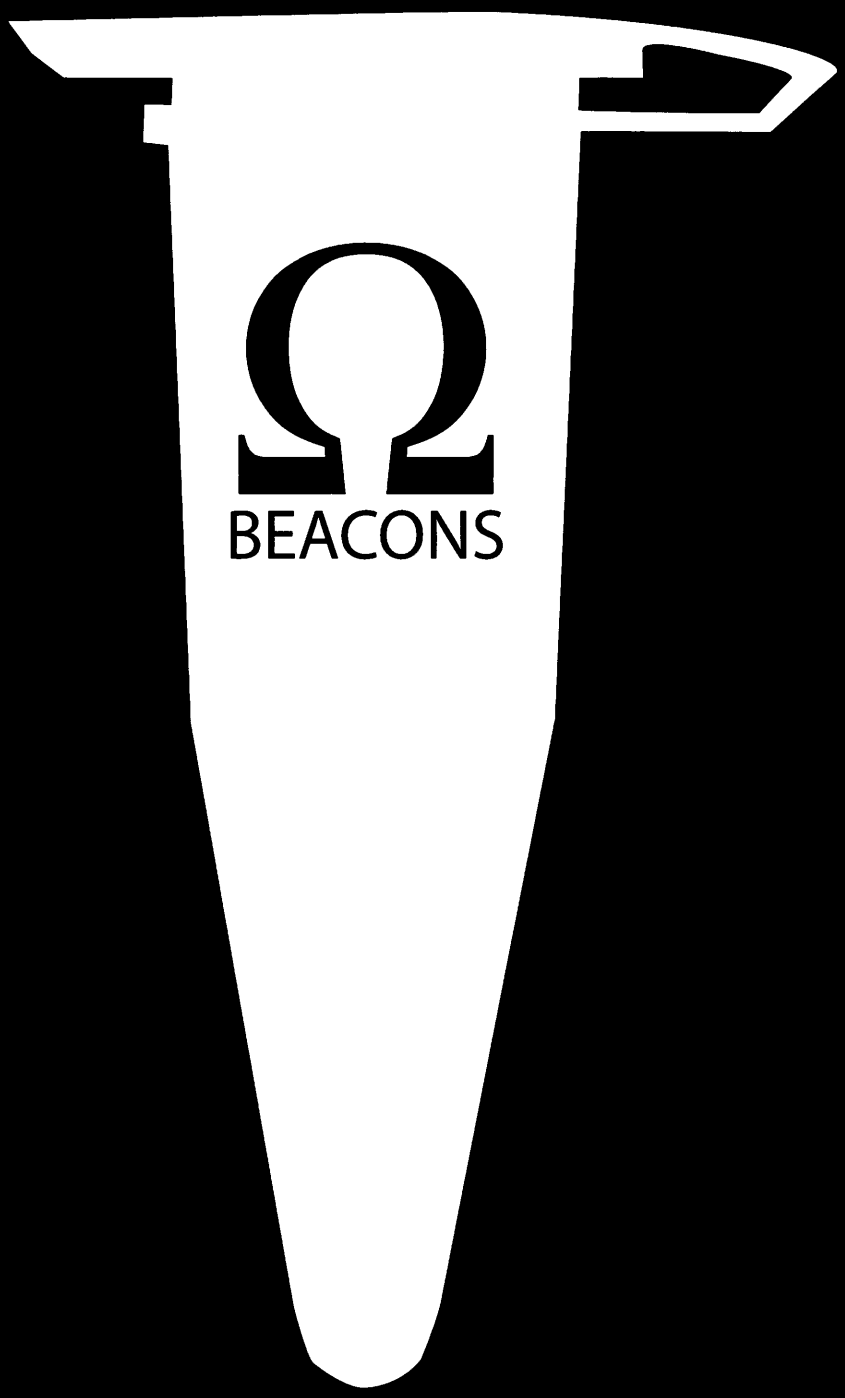

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back and breed that population." Other companies that have developed automated DNA sequencers include Amersham Biosciences, Applied Biosystems, and **Beckman Coulter**.

Gene expression systems have had a great influence on today's research, according to scientists who completed the survey. Several expression systems allow the expression of specific DNA sequences in a controlled environment.

The expression of proteins in *E. coli* is one of the easiest methods, in part because *E. coli* can be grown to very high densities. Researchers can work with a variety of commercial and noncommercial expression vectors that have different N- and C-terminal tags, as well as different strains optimized for specific applications. The two most common commercial tags are **Qiagen's** 6xHIS and Sigma-Aldrich's FLAG**.**

Yeast gene expression systems have an advantage over *E. coli* because they are eukaryotic systems that more closely mimic human cells. That makes them especially useful for the production of isotope-labeled proteins for nuclear magnetic resonance. The two best used yeast strains are *Saccharomyces cerevisiae* and *Pichia pastoris*, available from Invitrogen, **Qbiogene,** and Stratagene, among other vendors.

Insect expression systems, produced by BD Biosciences' PharMingen unit, and several other firms, can carry out more complex post-translational modifications than *E.coli* or yeast systems. They also have the best machinery for folding mammalian proteins. Hence they are the most likely systems to provide soluble protein when expressing a protein of mammalian origin. On the other hand, insect cells have two disadvantages. They cost more and take longer to express proteins.

THE PROMISE OF PROTEINS

Peering into the crystal ball, several researchers in the survey cited proteomics, the study or science of all the proteins in a cell or tissue, as a field for the future. "Clearly," says PerkinElmer's Cook, "proteomics is a major focus for investment financially and intellectually." Sorensen of Sigma-Aldrich agrees. "Proteomics is part of the immediate future of life science," he says. "The vast majority of drugs have protein targets; very few react with DNA. And proteins run cells. So as long as we are looking to correct the functions of cells, proteomics will stay around."

In several ways, the field represents a continuation of the research that led to genomics rather than a new and separate activity. "We looked at genomics as a kind of interlude in many ways," says Sorensen. "Proteomics used to be called protein chemistry. Now we have a lot of tools to do the job that we didn't have several years ago."

Scientists familiar with genomics need those tools because proteomics presents significant challenges that result from the complexity of the fundamental unit. While just four different bases make up DNA, proteins consist of 20 different amino acids. And while the linear sequence of bases alone determines what any DNA sequence codes for, a protein's activity stems from both its amino acid sequence and its secondary and tertiary conformation. First formed as a peptide chain from the amino acids, each protein folds into a complex three-dimensional structure. It is this configuration structure that ultimately determines the protein's activity.

In addition, proteins are dynamic molecules. While an organism's genome stays constant, the population of proteins within a cell changes as the cell responds to changing environments or states of health. That makes it difficult to characterize the proteome. Furthermore, scientists believe that some protein species present in very small proportions in cells exert strong influences on cellular function. Finding and studying the scarce proteins presents a serious challenge, because scientists can't replicate and mass-produce them in the way that they can do with DNA.

ANCIENT AND MODERN

Research tools old and new have helped protein chemists and biologically trained scientists to navigate their journeys into proteomics. Mass spectrometry and X-ray crystallography are familiar friends. More recent tools include fluorescent proteins for studying protein-protein interactions and protein chips, or microarrays, that can incorporate such molecules as antibodies, drug targets, and families of related proteins.

Past and Future Trends

The survey on which this article is based took place in May 2002 under the auspices of the *Science* business office. Life scientist members of the American Association for the Advancement of Science were invited to take an online survey about their work, their views of the most significant recent advances in their area of research, the tools and techniques that have enabled the advances, and their expectations for forthcoming advances. More than 2,000 individuals responded to the survey.

Whatever their provenance, tools must meet one key demand. "User-friendliness is very important," says Sigma-Aldrich's Sorensen. "What happened when molecular biology was the new thing was that kits for research became popular when there had never been any real kits for protein chemistry. Now that we're moving into proteomics, we're seeing that the need for applications-verified kits is very big."

Fluorescent proteins play a key role in the advance of cell biology, according to survey respondents. One of the most interesting is green fluorescent protein (GFP), a molecule found in a jellyfish. This protein can be incorporated into other systems that allow the visual location of a biomolecule in a living cell. Variants of GFP with rapid turnover rates can be useful for kinetic studies in mammalian systems.

BD Biosciences provides several versions of GFP for use in kinetic studies. "We offer artificially created variants," says Paul Siebert, vice president of research and development for its Clontech business unit. "More recently we have developed a set of proteins from a reef coral organism. They are very similar to GFP but have different emissions spectra that result in red, blue, green, and yellow fluorescence. The technology allows the user to visualize multiple proteins at the same time." Stratagene, meanwhile, offers a version of GFP uniquely cloned from a sea coral that has reduced toxicity and is available in a humanized vector.

In contrast to standard enhanced green fluorescent protein (EGFP), whose bright fluorescence remains stable for 24 hours, destabilized enhanced fluorescent protein (dEFP) variants feature rapid turnover rates. This shorter half-life makes the variants ideal for use in quantitative reporter assays and kinetic studies. They can provide accurate measurements of the kinetics of transient mRNA transcription from regulated

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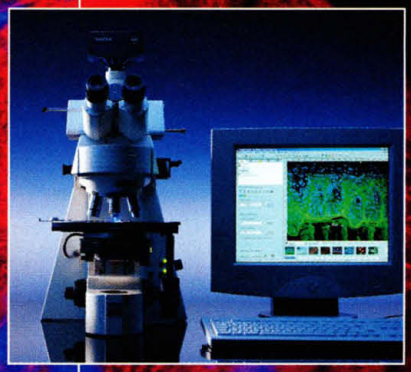

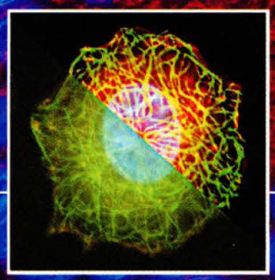

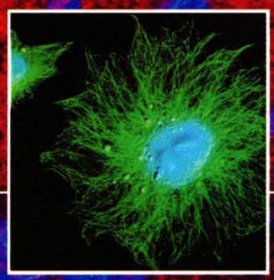

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promoters and can monitor gene expression during development. Scientists can easily and rapidly visualize dEFP using fluorescence microscopy or analyze it via flow cytometry.

PROTEIN CHIPS

It comes as no surprise that respondents bracketed protein chips with DNA microarrays as significant tools for advancing research in life science. The chips provide a relatively new way of studying proteins. They consist of large numbers of regularly arranged spots of compounds – such as antibodies or antigens, enzymes or substrates, or membrane receptors and ligands – that recognize a protein or proteins of interest. Any biological protein assay that uses a specific ligand-receptor interaction can be miniaturized into a protein chip or array format. Protein arrays are ideal for use in searching for pharmaceutically relevant targets and disease-specific marker proteins.

Each protein chip serves a different purpose in the research laboratory. Thus the ProteinChip System from **Ciphergen Biosystems** uses patented SELDI (for Surface-Enhanced Laser Desorption/Ionization) technology for rapid separation, detection, and analysis of proteins at the femtomole level directly from biological samples. The system consists of a reader integrated with software and a personal computer to analyze proteins captured on Ciphergen's arrays. It uses ion optic and laser optic technologies to detect proteins whose sizes range from small peptides of less than 1,000 daltons up to large proteins of 300 kilodaltons or more. It calculates their masses based on time-of-flight.

Zyomyx is developing high throughput, multiplexed protein chips for the discovery and development of therapeutic and diagnostic products. "We validate our chips," says cofounder, senior vice president, and chief technology officer Peter Wagner. "That's the key enabler for users. Protein arrays that aren't validated aren't worth it."

Users can configure Zyomyx's biochip based platform for different applications by varying the type of molecules that are immobilized and the method of detection used to read the chip. To date the company has focused on protein chips for expression profiling. However, its research teams have also developed highly parallel protein chips for determining primary structures, measuring protein-protein interactions, and measuring and characterizing enzymatic activities. "The key application areas are profiling of multiple proteins at the same time, pushing it all the way to clinical diagnostics," says Wagner. "We will move fast into high throughput proteomics with a miniaturized format that will extract the maximum amount of biological information from the smallest samples."

BD Biosciences' Clontech unit introduced the first commercially available microarray platform for protein expression profiling in February 2002. The microarray incorporates immobilized monoclonal antibodies on glass slides, direct dual color labeling, and fluorescent detection. It allows researchers to profile protein expression levels in tissues, sera, and primary cell lines and is designed to aid the identification of disease related and biologically important pathways.

AUTOMATION'S ADVANTAGES

Automated work stations and robotics have also played key roles in advancing DNA sequencing. These forms of equipment relieve researchers of the tedium that inevitably results when they carry out repetitive operations on large numbers of samples. Automated work stations from such firms as **Bio-Tek Instruments**, **Hamilton Company**, and **Packard BioScience** have also enabled scientists to decrease the time they need to complete experiments. They do so because they can be programmed to run during off hours when researchers have left their laboratories.

Suppliers such as Beckman Coulter, **Genomic Solutions**, and Packard Bioscience have taken automation a step further by creating robotic systems that can perform many of the upstream and downstream processing tasks required for DNA sequencing. For example, Packard BioScience offers a wide range of automation tools for research applications.

These advances in tools and techniques for genomics and proteomics have allowed researchers to produce increasing amounts of data faster. But at the same time they have created the current tidal wave of "omic" data. Without help from the bioinformatics community, these data will remain just that... data. Clearly, the research community needs powerful programs to interpret these data, to detect similarities between different sets of genomic and proteomic sequences, and to mine knowledge hidden in the data. "The more automated your processes are," says Klaus Heumann, CEO

Peering in the Crystal Ball

Do you want to know more about trends in life science? You'll have an opportunity in early November at La Jolla, California, during Healthcare Opportunities 2002, an event sponsored by consulting firm **Frost & Sullivan**.

One highlight of the five-day event will be an executive seminar on the future of biotechnology. The seminar, on the morning of November 6, will bring together leading executives in biopharmaceutical companies. "The round table will take a futuristic look at the possibilities in the short, medium, and long term," says Dorman Followwill, vice president of Frost & Sullivan's health care practice. "We'll start talking at the broad level and drill down as quickly as we can into specific areas. It's our goal to use this session as a touchstone for the real thought leaders in the industry to look prospectively in the future."

Specific subject matter for the session will include such issues as the widespread use of automatic predictive testing and the dream of personalized medicine – an issue that, in Followwill's view, "is no longer a question of if but when; the debate is about when the when will be."

The meeting of which the seminar is part also reflects a key trend in the life science business. For the first time the event brings together the life science, pharmaceutical, and medical device communities in a single conference. "We're seeing synergies across the board," explains Followwill. "We decided that the most realistic way of serving our clients is to run the three conferences simultaneously under one roof to allow cross-pollination of applications of existing technology. It will give executives an opportunity to think about convergence in a new context."

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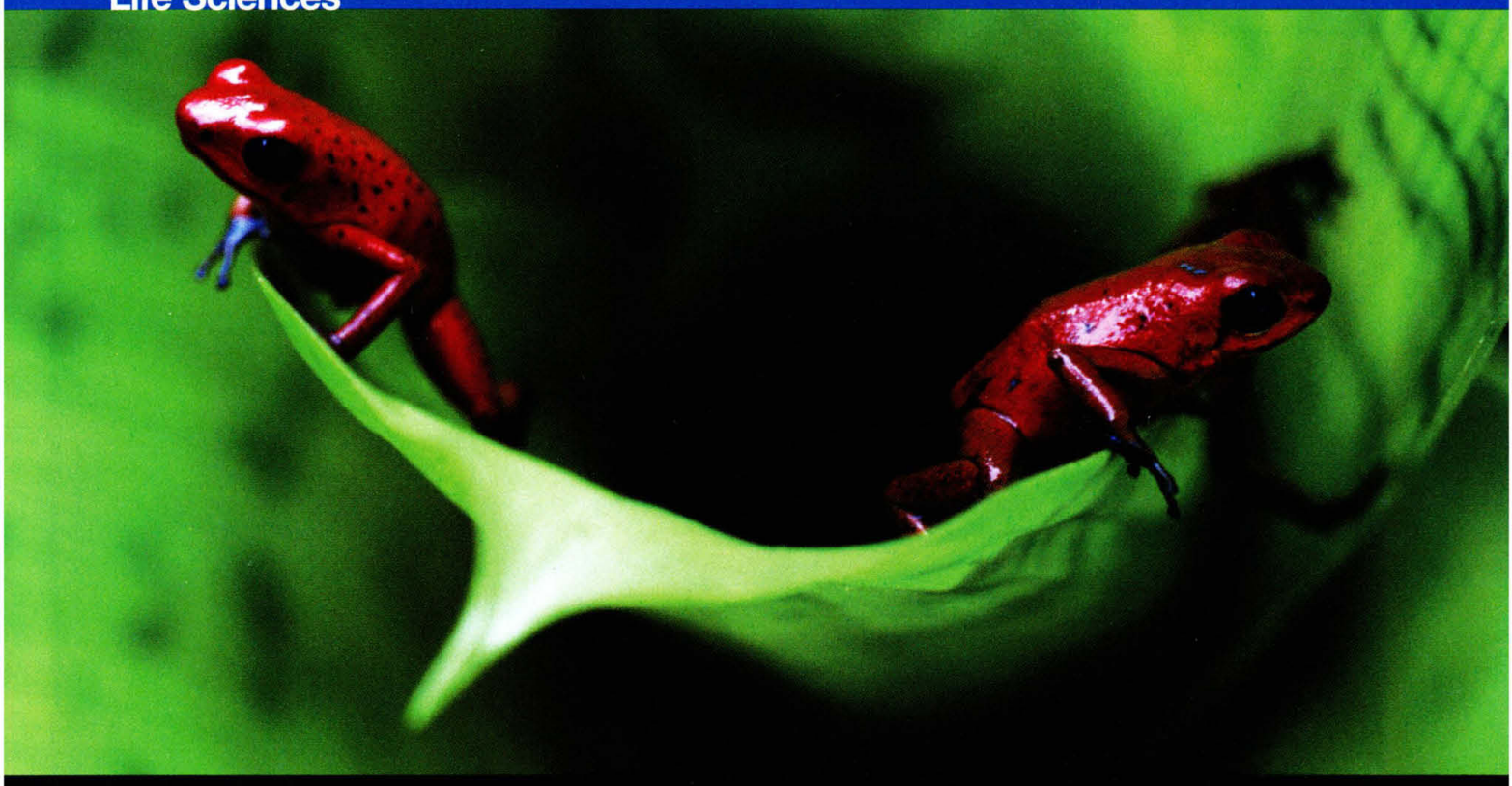

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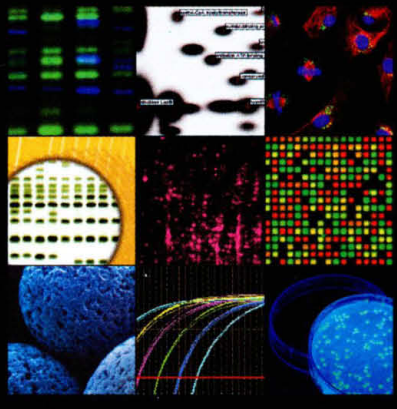

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of German company **Biomax Informatics**, "the more information becomes a factor for success. In this respect, life science is becoming a typical industry."

BURGEONING BIOINFORMATICS

Many researchers share that belief. In the survey, they cited bioinformatics – the application of computational and mathematical methods to biological data – as a field that will have a high impact on life science research. "We see bioinformatics as the most burgeoning skill in all of life science," agrees James Coffin, vice president of **IBM Life Sciences**. "We see a huge amount of application development popping up every day in universities and new firms."

Bioinformatics has particular value for researchers involved in genomics, proteomics, molecular evolution, and structural biology. The value stems in large measure from the ability of bioinformatics specialists to develop computer programs that can reveal unsuspected relationships between different DNA and protein sequences. Those relationships provide the keys to identifying new genes in organisms, establishing evolutionary trees, and identifying the single nucleotide polymorphisms believed to hold great promise in the area of personalized medicine or pharmacogenomics.

Before data can be analyzed, it must first be managed and stored in a user-friendly platform. Here, researchers face the problem of quantity. Traditional laboratory notebooks and newfangled personal computers don't have the capacity to manage the vast volumes of data now available about DNA and protein sequences. Storage of sequencing data can require hard drives with hundreds of gigabytes of capacity. "The volume of data is increasing astronomically. We're hearing pharmas say that they are adding 15 terabytes every day," says Coffin. "So you need leading-edge information technology tools that can mine the data."

IBM Life Sciences, **Sun Microsystems**, and other IT companies are developing those tools. "Our aim is to set up an overall platform on which researchers can build," Coffin says. Customers are responding enthusiastically. "We see major pharmas making huge investments in this area because getting control of their data and understanding what it means will help to fill their drug pipelines," he continues.

SOFTWARE SUPPLIERS

Growing numbers of companies supply software for analyzing DNA sequences and protein structures. These products and services often include access to proprietary databases with large volumes of sequence data. Some systems can be accessed through the Internet, a process that allows researchers to manipulate large data sets without the need for extensive investments in workstations and other hardware.

Biomax recently licensed its BioRS Integration and Retrieval Plus System, known for its high-speed data retrieval and user-friendly administrative functions, to biopharmaceutical firm Millennium Pharmaceuticals. "Millennium did a classic evaluation of the software product over a significant period of time," recalls Heumann. "Then we came to an agreement on a contract that started roughly a year ago. Millennium will use BioRS internally for data integration." Other firms, including **LION Bioscience**, also offer suites of bioinformatics programs.

Some life science organizations want software that resides on their own corporate servers, to maintain security and reliability. Companies that offer software packages designed for in-house use include **Accelrys, InforMax**, and **Molecular Mining Corporation**. These suppliers offer software programs for use in small laboratories as well as for larger research organizations.

THE IMPORTANCE OF IMAGE

Image analysis in general, and confocal microscopy in particular, are survey respondents' final favorites for enabling their research in life science. "We decided last year to set up a genomedical business involving laboratory equipment for the postgenomic era," says Kay-Peter Schmidt, section manager for bioanalytics at German firm **Olympus Europa**. "We're working with a Dutch company to develop a three-dimensional microarray for expression profiling that should be suitable for proteomics work. We are going to launch the instrument this year."

The ability to view 3-D images has become a priority in life science labs. Thus 3-D laser scanning confocal microscopy (LSCM) has recently established itself as a tool for obtaining high-resolution images and 3-D reconstructions in life science research. Companies such as **Carl Zeiss**, **Leica**, **Nikon**, and Olympus provide these powerful instruments.

The technology involves expanding a laser beam to make optimal use of the optics in the objective. A confocal aperture in front of the photodetector blocks the out-of-focus fluorescent light emitted from the specimen beyond the focal plane. That greatly reduces interference from above and below the focal plane.

Initially, the process generates a two-dimensional image of the specimen by performing a raster sweep of the specimen at the focal plane. As the laser scans the specimen, the system converts the analog light signal detected by the photomultiplier into a digital signal. The relative intensity of the emitted fluorescent light corresponds to the intensity of the image. A 3-D construct of a specimen can be generated by stacking a number of consecutive two-dimensional optical images.

Other imaging technologies are reaching the market. "Live cell imaging is becoming very popular," says Schmidt. Improved fluorescent detection will increase resolution and, most important, the speed of screening. All the basic technologies are available. And now for the first time it's possible to do imaging at high throughput."

Cook of PerkinElmer takes up that theme. "The main drive today is away from high throughput to high content, particularly in the context of cellular science," he explains. "There's going to be a major shift in the technology to a true digital microscope. We will investigate that very aggressively. It will also be a big research focus for a number of companies."

Vendors have started to fill up researchers' wish lists for tools and technologies that will serve them in the postgenomic era. The time has plainly come for researchers to obtain maximum benefit from them.

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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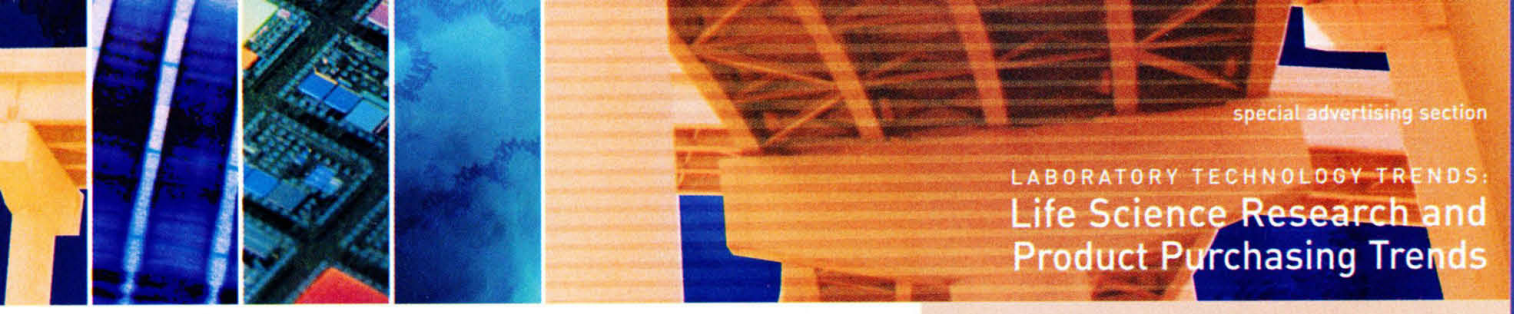

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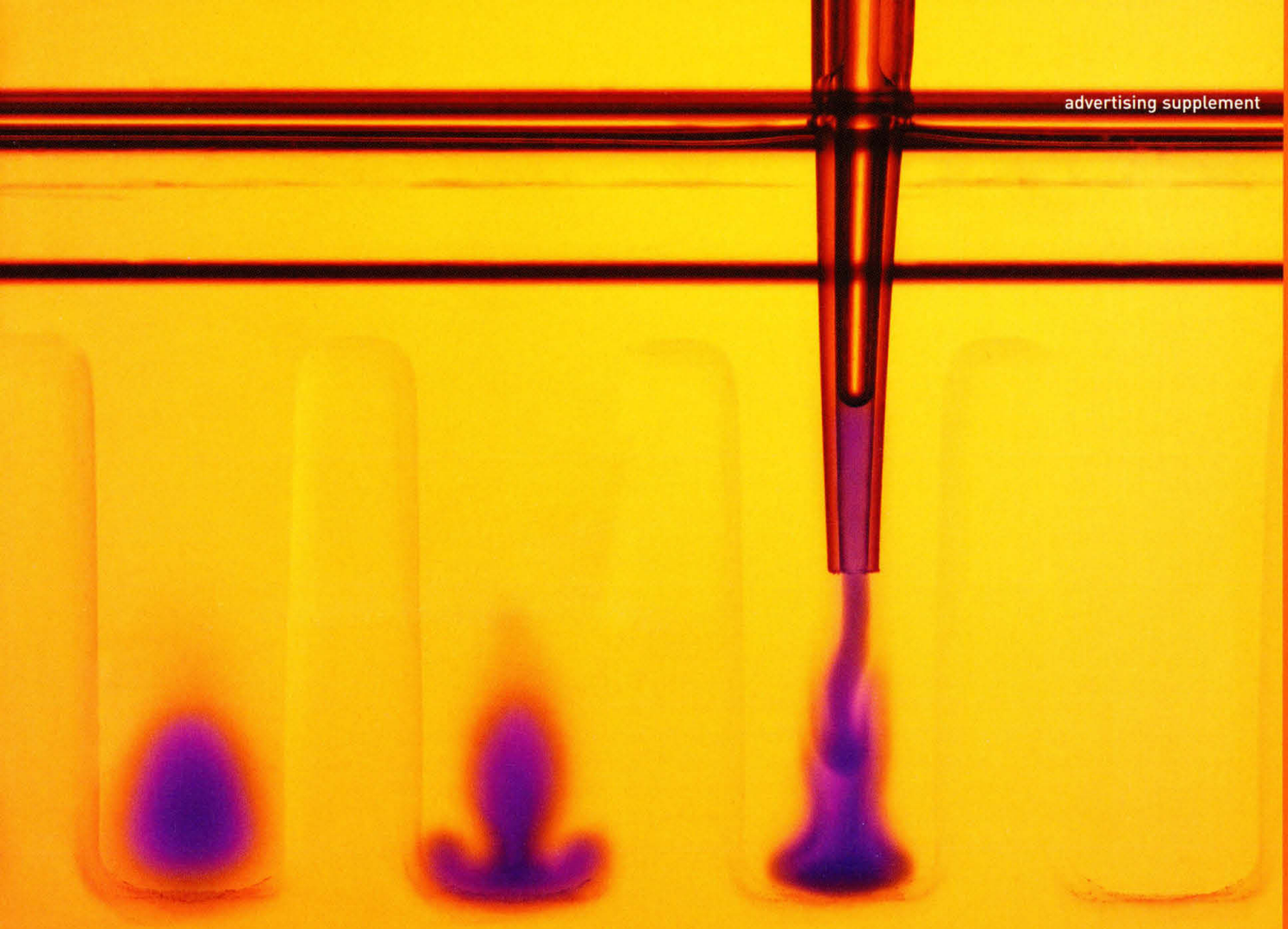

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Today's advances in science and technology often depend on interactions across disciplinary boundaries – even those between academics, biotechnology, and government. This article explores exciting career opportunities that require interdisciplinary skills. BY MIKE MAY

In the past 20 years, scientists created new techniques so fast that keeping up took great effort. Accordingly, investigators turned increasingly to defined specialties–often so they could stay abreast of the avalanche of advances even in very defined areas. Although the advances in laboratory techniques keep coming, today's needs in biology, biotechnology, government, industry, and medicine demand breadth of knowledge and laboratory capabilities.

In this article, a variety of experts from academia, government, and industry assert that people go the furthest if their skills cross traditional boundaries. Some of the most desirable combinations include: life sciences and programming, chemistry and law, or molecular biology and business.

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genomics INITIATIVE

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The Genomics Initiative forms the major portion of a $500 million New Life Sciences Initiative at Cornell University. This is a broad based initiative to recruit faculty and provide resources that foster a multidisciplinary study of biology in the post-genomics era. Since its inception, the Genomics Initiative has fostered interdisciplinary research, recruited 25 faculty to all colleges engaged in Life Sciences, developed key core facilities, and initiated educational programs at the graduate and undergraduate level. As part of the second phase of the Genomics Initiative, the University has begun several major building projects, initiated a new campus wide graduate fellowship program and will recruit up to 100 new tenure track faculty. New faculty are expected to participate actively in this new university-wide initiative. For more information on the Genomics Initiative and detailed job descriptions, see *www.genomics.cornell.edu.* Review of applications will begin October 15, 2002.

Computational, Statistical and Evolutionary Genomics

Statistical and Computational Genomics. The Department of Biological Statistics and Computational Biology is a new department that focuses on biological statistics, statistical and computational genomics, and computational and mathematical modeling of biological systems. Multiple assistant professor faculty positions will be filled over the next few years. Applicants should have research interests in statistical methodology, with a demonstrated expertise in applications involving statistical and computational genomics. Appointees will be expected to participate in campus-wide interdisciplinary programs such as the Cornell Genomics and the Biocomplexity initiatives.

Bioinformatics. Applications are invited for a tenure track, assistant professor position in the use and development of databases in biology. Applicants should have a Ph.D. in mathematical sciences, computer science, biology, or engineering. The position bridges different disciplines, and the successful candidate must demonstrate research accomplishments at the highest level in the field. The position is a part of the genomics initiative at Cornell-Ithaca and Tri-institutional Research Program (Rockefeller, Sloan-Kettering, and Cornell/Weill Medical College) in Computational Biology and Medicine. The departmental home of the Cornell position is open and will be decided based on the interests and qualifications of the successful candidate.

Computer Science and Computational Biology. Applicants at all ranks are sought for an interdisciplinary tenure track position in computational biology. The applicant should have a very strong background in computer science, and should also have a strong background and research interest in computational aspects of biology. Research may include such topics as development of genomic databases, bioinformatics and structural biology. We are looking for candidates with outstanding research accomplishments and who are committed to excellence in teaching computer science. This position will be in the Department of Computer Science.

Population Genetics and Comparative Genomics. Applications are sought for a tenure-track faculty position in the molecular and quantitative aspects of population genetics and comparative and evolutionary genomics. Appointment level is open, and outstanding junior candidates are encouraged to apply. Individuals who will contribute to campus-wide programs in evolutionary, comparative, mammalian, and/or computational genomics are of particular interest. The successful candidate is expected to participate in undergraduate and graduate teaching in population genetics, comparative genomics or evolutionary genomics. The likely departmental home is the Department of Molecular Biology and Genetics.

Human Population Genetics/Epidemiology. Candidates should have expertise in human genetics, human population genetics and/or epidemiology and an interest in investigating: gene-nutrient interactions in health and disease, the effects of single nucleotide polymorphisms on nutritional requirements, the relationships between nutrition and human genetic diversity or other metabolic questions with nutritional implications. This position is open at the assistant professor level in the Division of Nutritional Sciences.

Insect Genomics. We invite applications for the position of assistant professor in Insect Genomics at Cornell University. Areas of interest include comparative insect genomics, insect population genomics, or genomic analysis of interactions between insects and plants, parasitoids, microbes, or predators, although candidates with related interests are also encouraged to apply. The successful candidate is expected to develop a well-funded program that will gain national and international recognition, to participate in undergraduate and graduate teaching, and to contribute to the development of genomics and life sciences across campus. The likely departmental home is the Department of Entomology.

Mammalian Functional and Comparative Genomics

Cornell University is soliciting applications for a series of faculty positions from outstanding candidates who have expertise and research interests in mammalian functional and comparative genomics. The mammalian genomics program bridges biological science departments on the main campus of Cornell University.

Functional Genomics. Faculty searches for positions at assistant, associate, and full professor primarily seek individuals with expertise in murine model systems who will contribute to an expanding, university-wide interdisciplinary mouse program. Research areas include developmental and cell biology, neurobiology and behavior, germ cell biology, the genetic/molecular basis of disease, gene-nutrient interactions, and epigenetics. Individuals who use genome-wide methods to elucidate gene function and are applying novel strategies to the study of the genetic and molecular basis of development, normal and abnormal cell function, and animal-environment interactions are particularly encouraged to apply. Faculty positions are available in the departments of Biomedical Sciences, Microbiology and Immunology, Molecular Biology and Genetics, Molecular Medicine, Neurobiology and Behavior, and Nutritional Sciences.

Comparative Genomics. Research areas include quantitative and polygenetic traits, gene-environment interactions, disease pathogenesis, disease resistance, nutrition, development, and behavior. Individuals who use comparative and genome-wide research strategies on mammalian species are particularly encouraged to apply. Faculty positions are available in the departments of Animal Science, Biomedical Sciences, Clinical Sciences, Nutritional Sciences, Population Medicine and Diagnostic Science, and the Baker Institute for Animal Health.

Applicants should send a cover letter stating the position(s) for which they wish to be considered, curriculum vitae, a concise statement of research and teaching interests, and the names of at least three references to: **Cornell Genomics Search Committee, Cornell University, 249 Emerson Hall, Ithaca, NY 14853-1901 (cugenomics@cornell.edu; phone 607-254-7261; fax 607-255-6683).**

genomics INITIATIVE

CORNELL

Physical and Engineering Sciences/ Life Sciences Interface

The spectacular complexity in biology highlighted by the genomics era will make it necessary to take advantage of the newest developments in the physical, chemical and engineering sciences. We seek candidates who use innovative approaches to address biological questions or who engineer novel systems based on biological principles. Key areas of interest include, but are not limited to:

The Study of Molecular Events, Interactions, and Dynamics in Living Cells by Advanced and Newly Developed Physical and Chemical Tools. Examples include: the use of state of the art imaging techniques combined with genetic engineering to monitor the dynamics of molecular and genetic networks; the application of spectroscopic and fluorescence methods to monitor protein folding or protein-protein interactions; and the application of chemical synthesis to control or monitor macromolecular reactivity and interactions.

New Approaches to Probing Molecular Structure and Properties. Examples include: the study and manipulation of single molecules by laser tweezers, atomic force microscopy, or electron microscopy; innovative uses of synchrotron radiation to probe structure and dynamics; and the application of protein design to understanding macromolecular interactions.

The Generation of Advanced Materials and Systems Integrating, Mimicking or Expressing Biological Functionality. Examples include: the development, study, and/or use of new technologies in the areas of microfluidics, polymers and biomaterials; the design of novel catalysts; and the establishment of new ways to redirect cellular activities by altering enzymatic or transport functions in plants, microbes, or animals.

The Development of New Computational Models and Algorithms to Better Understand Biological Complexity and to Complement and Enhance Experimental Observation. Examples include: understanding the nonlinear dynamics of gene expression and signal transduction, system-wide analyses of transcription and translation, and the use of bioinformatics or statistical mechanics to advance mathematical biology, genomic analysis, and structural biology.

Potential home departments will be determined during the interview process according to the background and interests of the candidates, but may include departments in the physical, engineering, or biological sciences.

Metabolic Engineering/Assistant Professor. Applications are invited from candidates interested in analysis of integrated metabolic networks and their directed improvement especially through use of molecular/genomic technology. Topics may include the use of genomics and proteomics to understand the regulation of metabolic pathways, quantitative analysis of metabolic fluxes and the regulatory systems controlling them (metabolic flux analysis and control analysis), advanced methodology for measurement of metabolic fluxes, or techniques for optimizing flux distribution in a metabolic network. Of particular interest are emerging areas such as integration of designed biocatalysts with novel chemical functionality into overall cellular metabolism, or applications of metabolic engineering to processes in multicellular organisms, e.g. tuberization, wound healing, or bone remodeling. A Ph.D. or equivalent degree in an appropriate discipline with a solid foundation in both engineering and biological sciences is required. The position is offered in the Department of Biological & Environmental Engineering.

Microbial Genomics

Genomics of Plant Pathogenic Fungi. Research in fungal pathogenicity is expanding rapidly in response to worldwide genomic projects and the development of more sophisticated genetic tools. Applications are invited from candidates interested in applying genomic approaches to understanding evolution and mechanisms underlying important processes related to fungal plant pathogenicity. The position is offered at the assistant professor level in the Department of Plant Pathology.

Plant Genomics

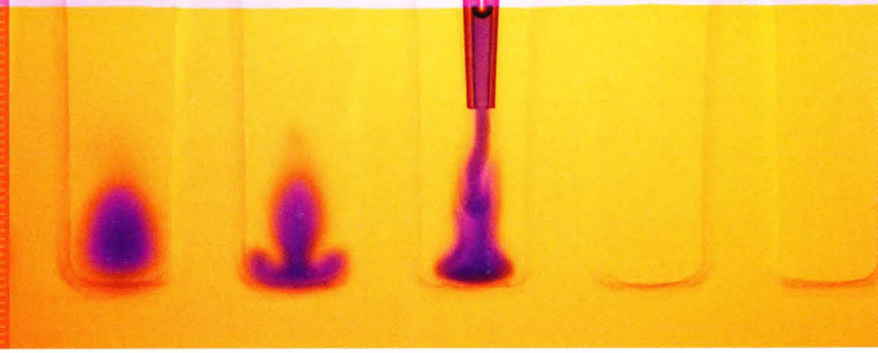
Plant Developmental Biology. Applications are sought from candidates whose research focuses on the molecular genetic analysis of plant developmental processes, preferably from an evolutionary perspective. The successful candidate will be based in the Department of Plant Biology, preferably at the assistant professor level and is expected to contribute to teaching in the area of plant developmental biology.

Plant Molecular Genetics/Assistant Professor. Applications are sought for a molecular geneticist working with either maize or *Medicago truncatula*. The successful candidate will be based in the Department of Plant Breeding and is expected to develop an active basic research program with potential long-term applications to crop species. Preference will be given to candidates interested in forming interactive networks with other researchers working in either grasses or legumes. Responsibilities include teaching a course in plant genetics/genomics/molecular biology.

Genomics of Abiotic Stress/Assistant Professor. Applications are sought from candidates whose research focuses on molecular aspects of environmental stresses, such as freezing, drought, salinity, mineral nutrient deprivation, hypoxia, soil compaction, soil acidity, and soil metal toxicity with long-term applications to agronomic crops. This may include the identification of regulatory genes, the use of genomic/proteomic approaches or metabolic profiling, and the development of transgenic lines and mutants that might provide rational approaches for the improvement of the freezing, drought or root-zone stress tolerance of crop species. Experience in stress physiology is desirable though not essential. The successful candidate will be based in the Department of Crop and Soil Sciences.

Plant Molecular Biology/Genomics. *The USDA-ARS Center for Health-Based Crop Genomics* on the Cornell University campus is soliciting applications for a scientist using genomic approaches to study aspects of plant metabolism/biochemistry/abiotic stress that impact human health and nutrition. The successful candidate will be expected to develop a strong research program utilizing both intramural and extramural funding, form collaborations with others in the Center and the broader Cornell Genomics Initiative, and will be offered an adjunct faculty position in an appropriate Cornell University department. Candidates must have U.S. citizenship and a Ph.D. in an appropriate discipline. The salary range is $54,275 to $83,902 per annum. To obtain additional information and application forms, call Drs. Leon Kochian (607) 255-2454 or Jim Giovannoni (607) 255-1414 or visit http://www.afm.ars.usda.gov/divisions/hrd/hrdhomepage/empopp.htm. Applications must include the Vacancy Announcement Number ARS-X2E-2193 and be postmarked by October 28, 2002.

Applicants should send a cover letter stating the position(s) for which they wish to be considered, curriculum vitae, a concise statement of research and teaching interests, and the names of at least three references to: **Cornell Genomics Search Committee, Cornell University, 249 Emerson Hall, Ithaca, NY 14853-1901 (cugenomics@cornell.edu; phone 607-254-7261; fax 607-255-6683).**



Hot Careers

A Trio of Opportunities

BARBARA TIPPINS

CARLSBAD, California: Scientists can work their way into many areas at Invitrogen Corporation. This company provides a wide selection of products for cell culture and molecular biology. Some of these products serve needs in basic research and others can be used in biopharmaceutical manufacturing. Barbara Tippins, marketing director in Invitrogen's separations and analysis business, said, "There are many fields of research here, from developing to marketing products."

This company offers opportunities that many scientists never imagine. Jay Amshey, vice president of research and development for Invitrogen's separations and analysis business, said, "We think of our work as packaging analytical biochemistry in a box. We create methods that are easy to use and reliable so people can save time and effort and get results more quickly. So we look for people who understand biochemistry and have a commercial sense of what we could build that people would want."

At Invitrogen, though, scientists can go beyond traditional positions. Amshey said, "There are very many different career paths within any organization. Scientists might go into sales, marketing, manufacturing." Moreover, changes in technology keep generating new tasks. For example, Tippins said, "There is a very high demand for people with a science background and knowledge of licensing or the legal side. The intellectual property area is very complex."

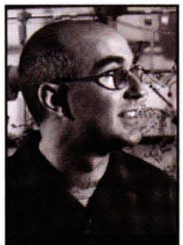
JAY AMSHEY

As technology moves forward, though, some skills from the past also return. Amshey said, "In the past few years, one of the really hot areas has been cellular and molecular biology, and many of the classical areas like protein and organic chemistry lost some interest. As a result protein and organic chemists are in very high demand."

In general, Amshey and Tippins encouraged people to acquire multiple skills. Tippins said, "There is a trend for different fields to come together—physics with biology, computers with biology. But it's difficult to find people with cross-disciplinary skills." Amshey said that he and his colleagues often use project teams to get all of the skills that a task needs.

People who go the furthest, though, need more than a resume filled with different techniques. Amshey said, "Lots of glamorous techniques in the lab are now cookbook. The people who make progress truly understand science and can go back to first principles and apply them to new problems."

CAMBRIDGE, Massachusetts: Modern work in pharmaceuticals and other areas of biotechnology often requires experts in carbon chemistry—the chemistry of life. As a result, Stuart L. Schreiber, investigator at the Howard Hughes Medical Institute and professor of chemistry and chemical biology at Harvard University, said, "The opportunities in organic chemistry and chemical biology are truly outstanding, both in the traditional venues—big pharma, biotech, government or academic labs—and increasingly in nontraditional ones."



STUART L. SCHREIBER

On the nontraditional side, Schreiber described several options. He said, "We see increasing numbers of our students and postdocs pursuing law, especially patent law." He also indicated that a combination of a chemistry background and training in business can be very valuable in biotechnology. Likewise, he sees communication as an exciting career for a chemist. "Science writing, working with journals, and editing," he said, "are all great ways to stay connected to the science. Actually, it connects you even more broadly than you could as a researcher at the bench." For any young chemist, though, Schreiber offers a simple piece of advice: "Follow whatever's in your heart."

Whatever direction your heart leads you, however, Schreiber noted that a combination of skills can take people the furthest today. As useful combinations, he suggested a knowledge of organic chemistry plus modern aspects of biomedical research and drug discovery or synthetic chemistry plus experience in computational science or engineering. As a central skill, though, Schreiber recommends the ability to make new substances, such as drug candidates.

The people with the most options down the road, Schreiber said, collect skills beyond science. He said, "We live in a multidisciplinary world, and that means that communication and teamwork are key, but training in those areas tends to be neglected in a Ph.D. or postdoc."

For someone pursuing a job, Schreiber proposed several tips. He said, "I would encourage job hunters to keep quality of life issues in mind. Also, seek people with whom you'd be proud to work." When you do get to an interview, Schreiber said, "Passion for your work is key. If you have it, you'll be very happy, and it will probably be spotted in an interview." Although most job hunters expect to be judged on how many first-author papers they produced or how capable they are of answering challenging questions, Schreiber said, "In reality, a major consideration from the employer is: Am I going to enjoy coming to work with this person every day? Will it be fun to interact with this person?"

BLACKSBURG, Virginia: Biological and computational research team up at the Virginia Bioinformatics Institute (VBI) at Virginia Tech. Research at this institute covers a wide range, including the study of cellular, molecular, and environmental interactions that impact agriculture, the environment, and human health. According to Bruno Sobral, VBI's director, "The career opportunities are excellent right now." He said that the best people get three to five offers, sometimes simultaneously from academia and industry. In addition, he indicated that corporations often approach VBI for collaborative research because they can't find all of the researchers that they need.

Currently, three areas of bioinformatics make the best career paths, according to Sobral. For one thing, he pointed out the value of model-

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BRUNO SOBRAL

ing and simulating biological networks—essentially any type of network, including genetic, metabolic, and so on. Likewise, complex systems analysis or reverse engineering of biological systems make excellent career choices. Sobral said, "This is a hot area, and it provides an excellent beachhead for engineers." Lastly, Sobral said that infrastructure opportunities in information technology keep growing. Specifically, he sees continued growth in the development of distributed systems, which use shared software, data, and so forth to provide high performance computing and integrated data access and analysis for a community of users.

For anyone planning a career in bioinformatics, Sobral recommends three capabilities. He said that people in this field should understand a biological system, such as yeast, for example. Second, he emphasizes the value of understanding the basic principles of experimental design in biology. Finally, Sobral said, "Everyone in this field needs strong quantitative skills." This aspect can come from computer science, mathematics, or statistics. Engineers surely possess the necessary quantitative skills, but may lack the biological knowledge. Sobral said that engineers might be able to team up with other people to get the biological help that they need.

"At a broad level," Sobral said, "the most valuable people have enough background in biology to understand biological systems and experiments, and they also have a strong computational or quantitative background."


MURRAY WIGMORE

CONCORD, Ontario: Today's wide use of mass spectrometers keeps MDS Sciex in the middle of changing technology. Murray Wigmore, senior vice president of worldwide sales and marketing, said that mass spectrometry is "still a very hot commodity." Consequently, this company needs experts who can understand the instrumentation behind spectrometry and the biological side of future detection discoveries in science. In fact, Wigmore said, "In current hiring for a future line of products, our major focus is proteomics and beyond." This company's future multipole coupling spectroscopy detection system for proteins and cells will also require hiring people in other fields, including biophysics, cellular biology, and protein chemistry.

"To gear up for proteomics, I also look for people with a biology degree and some experience in business," Wigmore said. He added: "It would be nice to have an understanding of cell-protein interactions and some business experience, like an MBA." Although this company generally looks for employees from Canada, a recent job search demanded a worldwide hunt.

People with skills from a couple disciplines also attract attention at MDS Sciex. Dawn Penner, director of human resources, indicated interest in, for example, applied chemists with programming experience who can understand the science and how to sort and interpret the data. She said, "Cross disciplinary people can be hard to find. A number of universities are trying to respond to industry needs, but that's relatively new."


DAWN PENNER

In addition MDS Sciex offers some unique options for scientists. At many companies a scientist needs to move to management to advance to higher levels. At MDS, though, a lab researcher can become a so-called principal scientist, which is like being a vice president without the management responsibility. Penner said, "You need to be a leading authority to get to this position, but you can progress to this level."

Also, Wigmore said that applicants should not feel the need for significant industry experience. Many of these fields are so new that few people have the necessary experience. Instead of waiting to see a job posted, Wigmore advises that applicants should pursue the companies that interest them. He said, "Don't wait to read about a job in the papers, go directly to the firms."

If you get invited for an interview, Penner said, "We are looking for very passionate individuals. Don't be afraid to show your passion." That can be difficult if the interview situation shakes up some nerves, but Penner mentioned that a good interviewer should try to make an applicant comfortable. Also, she said that an interview should be a two-way street: The interviewer wants to know if the candidate fits the company, and candidates should investigate whether it's the right company for them. Penner said, "Don't settle for second best. Get the job that you want."


DOUGLAS L. WEED

BETHESDA, Maryland: When asked to describe career opportunities in his field, Douglas L. Weed, chief of the National Cancer Institute's Office of Preventive Oncology and dean of education and training in the Division of Cancer Prevention, said: "Over the past 25 years, the field of cancer prevention and control has become a major focus of the cancer agenda in the United States if not the world. In the United States, the demand for professionals in cancer prevention and control has increased exponentially for many reasons but job opportunities have been driven in part by the priority given to prevention and control at NCI-designated comprehensive cancer centers." He also pointed out demand for prevention scientists at schools of medicine, nursing, and public health.

The field of cancer prevention and control, according to Weed, is multidisciplinary by its very nature. He said, "It spans many aspects of science and society, from the molecular regulation of cell differentiation to identification of anti-cancer dietary factors and the development of culturally relevant prevention interventions." Consequently, this area of research needs a variety of professionals: biologists, clinicians, epidemiologists, ethicists, geneticists, health educators, health psychologists, and more. Weed said, "Professionals trained in the population sciences, such as epidemiology, are in especially high demand."

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In this role, you will create a team to develop novel pre-clinical tests of psychiatric disorders to support the assessment of novel drug targets; perform pharmacodynamic tests to study drug action; and join multidisciplinary project teams working to discover novel CNS-based therapeutics of a core CNS Behavior group.

To qualify, you must have a PhD with a neuroscience and/or pharmacology focus and 1-3 years postdoctoral experience, ideally in a drug discovery environment. Working knowledge of behavior techniques to study drug action is essential as are excellent teamwork and oral/written communication skills.

Postdoctoral Fellowships

Postdoctoral Fellow – CNS - Obesity Research

Job Code: 4071HS

In this role, you will perform experiments to define a model of rat diet-induced obesity (DIO) at the molecular/genetic level under basal conditions and after targeted drug therapy. You'll receive training in the physiology/neurobiology of obesity, the design, execution and interpretation of PCR- and micro-array based experiments, and the application of research findings to the process of drug discovery under the guidance of a multidisciplinary team of investigators.

To qualify, you must have a PhD with an emphasis on neurobiology, physiology or feeding behavior. Familiarity with molecular techniques and relevant publications is essential.

Postdoctoral Fellow – Immunology

Job Code: 4072HS

In this role, you will use biochemical and pharmacological approaches to characterize the interaction of chemokine receptors and their ligands.

To qualify, you must have a PhD in molecular biology, biochemistry or a closely related field and strong skills in protein biochemistry and/or molecular biology as applied to chemokine receptors or other GPCR. Experience in Eeukaryotic protein expression, GPCR pharmacology (radioligand binding analysis, etc.) and fluorescence resonance energy transfer techniques is ideal.

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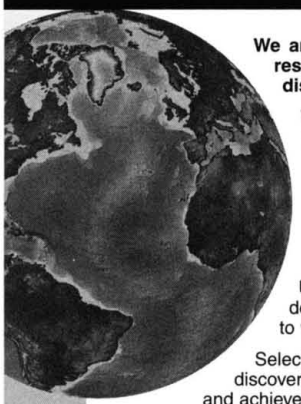

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Research Investigator, Macromolecular Structure, Princeton, NJ

We are currently seeking individuals with a PhD in Chemistry, Biochemistry, Biophysics or a related field and at least 5 years' experience in NMR and at least 2 years' experience in biological NMR. Candidates will have an in-depth understanding of NMR theory, demonstrated experience in developing and implementing state-of-the-art experiments for high-resolution biological NMR applications and knowledge of NMR instrumentation. Knowledge of Unix, scripting languages and basic programming skills and a familiarity with the newest strategies for structure determination by NMR are required. A demonstrated ability to handle and manipulate biological samples and the ability to work within a team and communicate effectively are necessary.

Selected candidates will identify, implement and evaluate new technologies that can enhance the NMR impact on drug discovery, maintain and troubleshoot NMR instrumentation, support the research efforts of colleagues through collaboration and achieve research objectives. **Source Code: 02-0001672**

Sr. Research Investigator, Cardiovascular Biology, Princeton, NJ

We are currently seeking individuals with a PhD or MS with at least 3 years of industry experience beyond a postdoctoral fellowship. Candidates will have extensive experience with large and small animal models of cardiac function and disease, specifically with animal models of hypertension, heart failure and ischemia and experience with in vitro models of cardiac function such as the Rat Langendorf Heart model. Excellent oral and written communication skills and the ability to interact in multidisciplinary teams are required. Experience with transgenic mouse models of cardiac function a plus.

The selected candidate will lead drug discovery working groups by managing a group of associates working on models of cardiac function and disease, establishing and developing these in vivo and in vitro models and clearly communicate results to drug discovery working groups and other multidisciplinary teams. **Source Code: 02-0002165**

Research Associate, Applied Genomics, Princeton, NJ

We are currently seeking individuals with a Bachelors degree in Biological Sciences or Chemistry and at least 2 to 4 years' related experience. Candidates will have basic Molecular Biology laboratory skills including, pipetting, multichannel pipetting, PCR protocols, and subcloning. Knowledge of DNA sequencing protocols and sequence analysis software such as phred, phrap, Consed and Sequencher is required. Good organizational and multi-tasking skills, strong interpersonal skills, the ability to effectively interact with all levels of staff and external contacts and work as an effective team member are necessary. Knowledge of basic Unix commands and experience using liquid handling robotics is a plus.

The selected candidate will perform sequencing reactions and DNA template purification using automated and enzymatic procedures, operate thermal cyclers and automated DNA sequencers and interact with clients of the sequencing facility to offer sequencing advice. **Source Code: 02-0002572**

Senior Research Investigator, Metabolic Research, Princeton, NJ

We are currently seeking individuals with a PhD in Biochemistry, Cellular Biology or Molecular Biology and at least 2-5 years' postdoctoral experience. Candidates should have expertise in lipid biology, with some experience in applications of lipid biology to drug discovery. A background in applications of lipid biology to obesity and diabetes would be preferred. Experience in assay development is also extremely important. Good organizational and problem-solving skills are a plus, along with the ability to work in a team setting.

The selected candidate will contribute to a team effort focused on the discovery of therapeutics in the metabolic disease area by managing a research group with expertise in assay development and novel target identification. Additionally, the selected candidate will contribute to a department effort in metabolic disease research and drug discovery. **Source Code: S02-0002856**

Research Associate, Applied Genomics, Drug Discovery, Princeton, NJ

We are currently seeking individuals with a BS/MS in Molecular Biology, Biochemistry, Cell Biology or a related field and at least 1 year of research lab experience. A solid background in molecular biology techniques, e.g. RNA isolation, cDNA synthesis, in vitro transcription, PT-PCR, familiarity with microarray/GeneChip technology and the ability to work independently is required. Candidates should also be willing to learn new skills, teach others, share reagents and protocols and work to assure the success of a group effort. Strong PC skills are also necessary.

The selected candidate will assist in high throughput transcriptional profiling using Affymetrix GeneChips and cDNA micro-arrays, input and track samples with laboratory management software and data acquisition using image analysis tools. Additionally, they will analyze data quality, annotate and submit to distributed database and prepare RNA from various tissues as needed. **Source Code: 02-0002408**

Research Scientist, Investigative Toxicology, Wilmington, DE

We are currently seeking individuals with an MS or higher degree in Biological sciences/Biomedical Engineering with at least 2-5 years of experience. This position requires a broad-based knowledge of cardiovascular biology and ion channel physiology, strong basics in electronic instrumentation/data acquisition and analysis and experience with in-vitro electrophysiology techniques (patch clamp and two-electrode voltage clamp and current clamp). The incumbent must also have experience in isolation of cardiac myocytes and Purkinje fibers and in recording cardiac action potentials. Experience with cell culture techniques is desired but not essential. Knowledge of good laboratory practices (GLP) is preferred. Strong computer skills for data acquisition and analysis and good communication skills are essential.

The selected candidate will participate in electrophysiology experiments to assess the ion channel toxicity of preclinical drugs. They will also be involved in experimental design and data interpretation, analyze and summarize data and communicate results (oral and written reports). **Source Code: S02-0001636**

If you would like to join our highly collaborative team, please send your resume, indicating Source Code: (See Above) and the title of the position of interest, to: **Bristol-Myers Squibb, Pharmaceutical Research Institute, P.O. Box 4000, Princeton, NJ 08543-4000, Fax: 609-252-3242; or Email to: recruit.pri@bms.com,** indicating Source Code: (See Above) at subject line.

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SR. SCIENTIST, PROTEIN CHEMISTRY

Develop methods for protein purification and characterization, including GLP/GMP processes, implementing new assays and mentoring/supervising a team of Protein Biochemists. Your background should include strong knowledge of HPLC, analysis of recombinant proteins, and experience with protein purification processes and enzyme assays. In addition, related supervisory experience and/or project management skills are required. Job Code: PA-11N-02

NEW BUSINESS DEVELOPMENT, PROJECT MANAGER

Apply your leadership, planning and management skills to healthcare projects encompassing late research activities through development, regulatory filing and commercial launch. Your advanced degree in a relevant scientific discipline or equivalent should be supported by 3–5 years of project management experience in the pharmaceutical/biotech industry demonstrating effective project management and mentoring skills within a matrix environment. Job Code: PA-31N-02

RESEARCH ASSOCIATE, BIO-PROCESS ENGINEERING

Participate in the hands-on development of fermentation, recovery and purification processes for fermentation products in the R&D pipeline. Your focus will be on analytical/small-scale testing and characterization of product streams to determine effects of fermentation and processing conditions on product quality and yield. You will need an MS in Biochemistry, Microbiology, Biochemical Engineering or Chemical Engineering and 3–4 years relevant industrial experience, including excellent experimental design and laboratory skills plus familiarity with bioprocess operations and analytical techniques. Job Code: PA-45R-02

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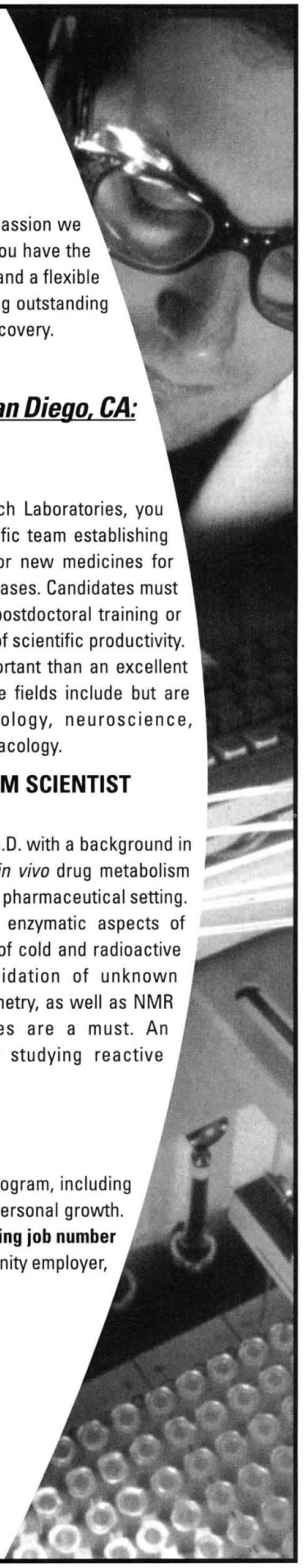

At Merck Research Laboratories, our priority is improving patient health around the world. It's a passion we share with a diverse workforce that is committed to the discovery of breakthrough medicines. If you have the desire to be a Merck professional, you'll find extensive resources, continued education programs, and a flexible environment that supports growth, personal empowerment and creativity. We are currently seeking outstanding scientists and biochemists with a passion for highly creative, experimental approaches to drug discovery.

Positions available in West Point, PA:

BIOCHEMIST/CHEMIST
JOB #: BIO000128

Candidates must possess an M.S. or B.S. in chemistry, biochemistry or a related field, and experience in the chemical modification of biological macromolecules or polymers. Expertise using spectroscopic techniques (UV, FT-IR, CD, light scattering, mass spectrometry) and LC separation methods is preferred.

SENIOR RESEARCH BIOCHEMIST
JOB #: BIO000138

In this role, you will be responsible for conducting basic and developmental research on the identification, isolation, and characterization of biomolecules, as well as developing various types of assays, such as ELISAs, competitive binding, RIAs, etc.

Candidates must possess a Ph.D. of Philosophy degree in biochemistry or a related discipline along with an excellent academic record and a high degree of motivation. Candidates who possess an M.S. degree and at least 5 years of research experience will also be considered. A background in general biochemistry with experience in current isolation techniques for biomolecules encompassing methodologies such as low and high pressure liquid chromatography, membrane filtration techniques, equilibrium centrifugation, and electrophoretic methods is required. Analytical skills with proficiency in spectroscopy, electrophoresis, and immunological techniques are a must.

Positions available in San Diego, CA:

SCIENTISTS
JOB #: BIO000148

As a scientist at Merck Research Laboratories, you will be part of a dynamic scientific team establishing new paradigms in the search for new medicines for neurological and psychiatric diseases. Candidates must possess a minimum of 3 years' postdoctoral training or equivalent, and strong evidence of scientific productivity. (The field of training is less important than an excellent record of achievement.) Possible fields include but are not limited to: molecular biology, neuroscience, biochemistry, biology, and pharmacology.

SENIOR DRUG METABOLISM SCIENTIST
JOB #: CHE000151

The candidate must possess a Ph.D. with a background in Organic Chemistry, *in vitro* and *in vivo* drug metabolism and up to 3 years' experience in a pharmaceutical setting. Knowledge of mechanistic and enzymatic aspects of metabolism, metabolite profiling of cold and radioactive samples, and structural elucidation of unknown compounds using mass spectrometry, as well as NMR and other spectral techniques are a must. An understanding of methods of studying reactive metabolites is also required.

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 consideration, please apply online at www.merck.com/careers and search for the corresponding job number above to submit an updated CV, list of references and contact information.** We are an equal opportunity employer, M/F/D/V.

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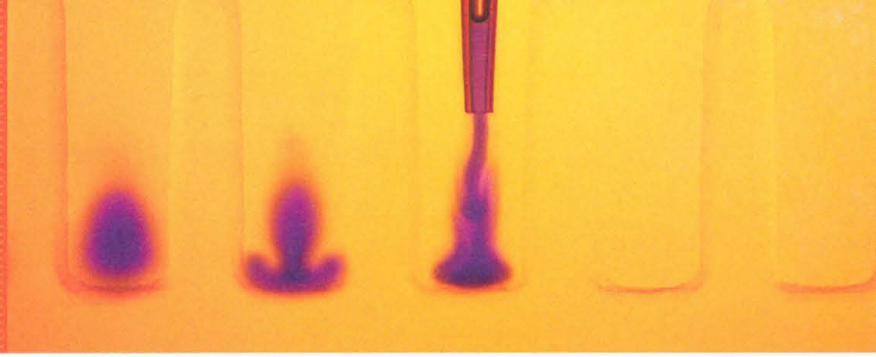


To work in this field, Weed encouraged two skills: leadership and communication. He said, "While these are the key components to success in any scientific field, the multidisciplinary nature of cancer prevention and control demands a high skill level in communication. Leadership and all the factors that make strong leaders are also needed to help make progress in the fight against cancer." Accordingly, NCI's Cancer Prevention Fellowship Program makes leadership a high priority.

PETER WORKING

FOSTER CITY, California: Maturation of the technology at Cell Genesys, Inc., leads to changing job opportunities. Currently, several of this company's cancer vaccines and two of its oncolytic virus therapies are in clinical trials. Consequently, Peter Working, vice president of research and development, said, "Within gene therapy, we and other companies are turning into development companies. So we need people experienced in gene-therapy research and drug development." Right now, Working points to two areas—analytical chemistry and process engineering—as specifically good career paths. He said, "Those two areas are where we look the hardest but still have the most difficult time finding qualified people."

Whatever skills you bring to Cell Genesys, make sure to highlight your experience. Working looks for people with practical, hands-on experience. But just how much experience might a successful applicant need? Working said, "We don't expect people to come here and have already done exactly what we want, but we like people who have tried it out, or something like it." For Working, trying it out might just mean doing a summer internship during an undergraduate career. He said, "One summer's worth of the right experience makes a big difference. We want people to know what they're walking into."

In fact, Working recommends that people get an undergraduate degree and then take some time out from academics. During that academic hiatus, find a job in a company that does what you think you'd like to do. Working said, "Spend that time learning how the company works. Find out what happens in business development, regulatory areas, and clinical ones." But be careful to stay only about two years—one is not enough and three can be too many. Even a starting industrial salary might grow seductive quickly, but Working encourages young employees to keep the long view in mind. In this industry, people need advanced degrees to really climb the biotech ladder.

On your way, never forget skills outside of your scientific ones. Working said, "The people who move the furthest and the fastest can speak and write the best." In some cases, Working and his colleagues even ask applicants to submit examples of their writing, say, in a research report.

JOHN QUACKENBUSH

ROCKVILLE, Maryland: The Institute for Genomic Research (TIGR) employs a wide variety of scientists with skills in genomics, functional genomics, and bioinformatics. John Quackenbush, an investigator at TIGR, said, "With the sequencing of the genome, the next real challenge will be decoding what the genes do, and functional genomics provides an opportunity to begin to address those questions." He added, "Of all the areas in biology, this is one that will provide the greatest job opportunities from laboratory technicians through faculty, staff, and postdocs."

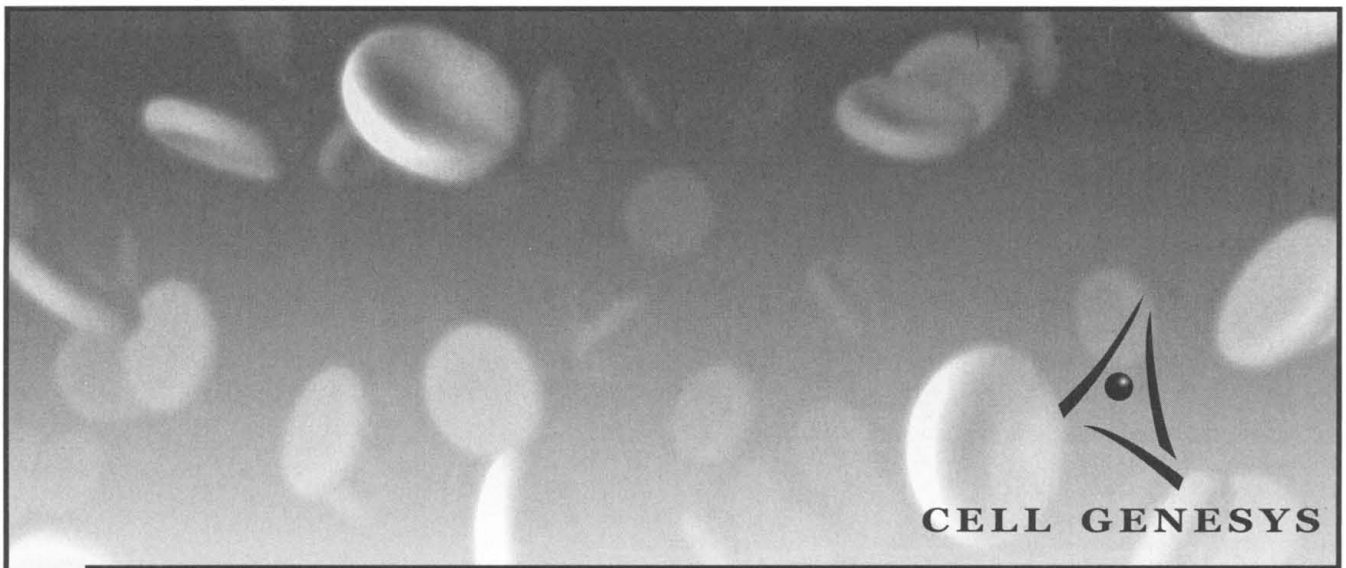
Work in functional genomics also promises to keep pumping out large volumes of data. Consequently, most experiments demand that scientists possess a working knowledge of collecting, managing, and analyzing data, lots of data. "One peculiar thing," Quackenbush said, "is the disconnect between people doing experiments and those writing the software." He indicated that people may turn to bioinformatics in an effort to get out of the lab, but he doesn't recommend that. He said, "We need generalists who can go in the lab and do the experiments and then write some of the software. If you generate your own data and then help with the software, you get the most useful programs."

Overall, Quackenbush endorses any kind of diversity. In thinking about his colleagues, he said, "Those in most demand have talents in multiple areas. People who do software development and have ties to the lab get recruited for supervisory positions."

Beyond the lab, though, Quackenbush encourages today's biologists to know something about computers. He said, "Every biologist should take some programming classes." Whether you try something simpler, like PERL, or more complicated, like JAVA, today's biologists need the ability to deal with large bodies of data. Off-the-shelf software, Quackenbush explained, might not do everything that you want.

Once a person finds a job opportunity that seems interesting, Quackenbush encourages careful preparation of your materials. He said, "For me the most important thing is the cover letter, because I want to know if applicants can think logically and are excited about their work. Communicate who you are and what you're interested in doing." He recommends discussing or presenting anything that demonstrates skill and enthusiasm. He mentioned that some people bring along code from a program or even a PowerPoint slide presentation on research. "My goal," Quackenbush said, "is always to have somebody who's dedicated to the work and is excited. They are the ones who make things happen."

Mike May is a freelance writer based in Madison, Indiana, U.S.A.



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Cell Genesys, with offices in Foster City, California, San Diego, California, and Memphis, Tennessee, is a biotechnology leader in the development and commercialization of innovative therapeutic products for cancer, based on gene therapy technologies. The company has a broad portfolio of clinical stage product development programs, the largest patent portfolio in the gene therapy field, proprietary gene delivery technologies, and a strong balance sheet, all of which have helped position Cell Genesys as a leader in gene therapy. The company is conducting clinical trials in multiple types of cancer utilizing two of its three product platform technologies--GVAX® cancer vaccines and oncolytic virus therapies. Cell Genesys' gene therapy technologies, the company's third product platform, are being evaluated in preclinical programs for multiple types of cancer. Our wide array of programs and an extensive portfolio of patents make us a company you'll be proud to join.

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Senior Research Associates

Assay Development Scientists

Process Development Scientists

Formulation Development Scientists

Regulatory Affairs

Manager, Quality Control

Manufacturing Supervisor

For a complete list, job descriptions and locations, please visit us at:

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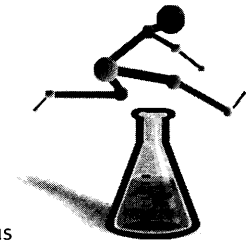

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Faculty Positions

The Division of Basic Sciences of the Fred Hutchinson Cancer Research Center is soliciting outstanding applications at the junior faculty (Assistant Professor) level. Current faculty research ranges from developmental to structural biology, and includes studies in gene regulation, chromosome dynamics, neurobiology, oncogenesis, virology, cell cycle control and evolutionary mechanisms **(http://www.fhcrc.org/basic/basic_faculty.html)**. We seek new faculty who complement these existing areas or who extend beyond them. For example, in the fields of (but not limited to) cell biology, infectious disease, molecular modeling, quantitative biology or proteomics. In particular, we welcome applications from scientists who are developing and using new methodologies to investigate important biological problems. Candidates should send a curriculum vitae and a concise statement of their research plans, and arrange to have three letters of reference sent to:

Basic Sciences Faculty Search Committee
Fred Hutchinson Cancer Research Center
Division of Basic Sciences
1100 Fairview Ave N. (A2M-015)
P.O. Box 19024
Seattle, WA 98109

Application deadline: October 15, 2002

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CANADA RESEARCH CHAIRS
FACULTY OF PHARMACEUTICAL SCIENCES
THE UNIVERSITY OF BRITISH COLUMBIA

The Faculty of Pharmaceutical Sciences at UBC is seeking full-time tenure track faculty appointees at the Assistant, Associate or Full Professor level who will develop distinguished research and teaching programs at UBC, and would be appropriate for either a Tier I or Tier II Canada Research Chair application. For details on the Canada Research Chair Program, visit: www.chairs.gc.ca. The specific areas of interest are: **Neuropharmacology, Novel Drug Delivery Systems, Pharmaceutical Outcomes Research, Pharmacogenomics, and Toxicology.**

Applicants must possess a PhD in the appropriate area, preferably with several years' postdoctoral experience, exceptional teaching skills and a demonstrated ability to attract research grant funding. The appointee will be expected to employ advanced research techniques; be creative in their research area; and teach both at the undergraduate and graduate level. The successful applicant's research interests should complement the Faculty's existing internationally renowned research programs in the areas of neuro- and cardiovascular pharmacology, drug and lipid metabolism, pharmacokinetics and drug delivery systems (see www.ubcpharmacy.org/). In addition, the successful candidate will be a member of the UBC Canada Research Chair Clusters.

Salary is negotiable, commensurate with experience and is subject to final budgetary approval. **The closing date for applications is December 1, 2002; preferred start date is by July 1, 2003.**

UBC hires on the basis of merit and is committed to employment equity. We encourage all qualified persons to apply. Canada Research Chairs are open to individuals of any nationality; offers will be made in accordance with Canadian immigration requirements associated with the Canada Research Chairs program.

UBC

Applications, including a curriculum vitae, a description of research interests, copies of up to five publications, a statement of teaching interests and accomplishments, and names of five referees (including two at arm's length), should be sent to **Dr. R. Sindelar, Dean, Faculty of Pharmaceutical Sciences, The University of British Columbia, 2146 East Mall, Vancouver, B.C. Canada V6T 1Z3; Phone: 604-822-2343; Fax: 604-822-3035; Email: mlangton@interchange.ubc.ca.**

UK

UNIVERSITY OF KENTUCKY

The University of Kentucky College of Medicine is seeking applications for Chair of Physiology. The department is one of six basic science departments within the University of Kentucky Chandler Medical Center in Lexington, KY and ranks in the top 20 in NIH funding among physiology departments in the U.S. Twenty-five faculty members fulfill the mission of the department in education, research, service, and supporting the aims and objectives of the Medical Center. Faculty members teach approximately 600 graduate students and undergraduates per year in more than six programs. The department has broad expertise in molecular and cellular methods and in all major areas of physiological science, including neurobiology, aging, and cardiovascular, reproductive, respiratory, endocrine and renal physiology. The College is seeking a candidate who will build on the foundation of this highly successful department. Candidates must have a PhD or MD and demonstrate a record of leadership and administrative experience.

Please send nominations or an application packet including a letter of interest, a CV and three reference names to Karen Dodridge, College of Medicine, Office for Research and Leadership Development, L007 Kentucky Clinic, Lexington, KY 40536-0284 or to kadodr@email.uky.edu. The committee will begin reviewing applications on September 3, 2002, and will continue accepting them until the position is filled.

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LEXICON PHARMACEUTICALS

Lexicon Genetics Incorporated is a biopharmaceutical company focused on the discovery of breakthrough treatments for human disease. Lexicon Pharmaceuticals, in Princeton, New Jersey, is Lexicon's platform for combining novel gene function discovery with highly efficient and proven chemical approaches to discover small molecule drugs.

Currently, we are seeking a Senior Director of Pre-clinical Development, who will be based out of our facility in Princeton, New Jersey. This key, strategic position will coordinate all activities leading to the successful submission of IND documents to the FDA. This will include pre-qualifying and monitoring CRO's that will be used to outsource active ingredient supply, and toxicology, formulation, stability and metabolism studies.

Qualified candidates will possess a Ph.D. in biology, chemistry, or pharmacy, a proven track record of bringing small molecule compounds to IND status, and 10 years experience (minimum 5 years managerial) working in pharmaceutical research and development.

Lexicon offers an outstanding total rewards package, which includes competitive salaries, comprehensive benefits, 401(k), and stock options. Interested candidates should respond to: Human Resources, 279 Princeton-Hightstown Road, East Windsor, NJ 08520, fax 609-448-8299, or e-mail SeniorDirectorPCD@lexpharma.com.

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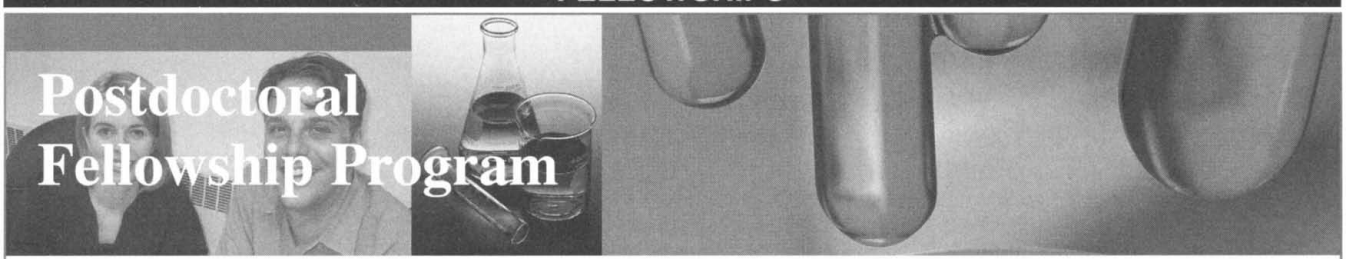

Health Canada is inviting applications for its new Postdoctoral Fellowship program.

This program provides an opportunity for highly motivated postdoctoral researchers to work with prominent Health Canada researchers for up to 2 years in an innovative research environment that promotes excellence in science to support informed decision-making.

The range of scientific disciplines considered in the program include the biological, physical, and environmental sciences, social sciences, and areas of policy research and analysis that address the importance of translating science outcomes to sound health policy.

A list of Health Canada researchers who will act as potential supervisors is available on our Web site. Candidates and prospective supervisors will jointly develop a research proposal, to be submitted before **October 11, 2002.**

This program is open to Canadian citizens and landed immigrants who are resident in Canada or abroad. Non-Canadians may also be considered for fellowships under special circumstances.

Postdoctoral fellows will receive a stipend of up to $40,000 per year.

For more information, please visit our Web site at **www.healthcanada.ca/fellowships**. Written inquiries and applications may be sent to:

Postdoctoral Fellowship Program
c/o Office of the Chief Scientist
Health Canada
Frederick G. Banting Building
Tunney's Pasture, Postal Locator 2202C
Ottawa, Ontario K1A 0L2
Canada
E-mail: PDF_PBP@hc-sc.gc.ca

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Director, UC Davis Genome Center

The University of California at Davis invites applications and nominations for the position of founding Director of the UC Davis Genome Center. The Genome Center has been established as part of a broad, campuswide initiative to develop an internationally recognized research program in genomics that builds on and extends existing strengths in the life sciences. The Center will have 17 new faculty positions and be housed in a 211,000-sq.-ft. research building, already under construction and due for completion in July 2004.

- The Center will provide resources for new and existing faculty scientists in the School of Medicine, School of Veterinary Medicine, College of Agricultural and Environmental Sciences, Division of Biological Sciences, Division of Mathematics and Physical Sciences, and College of Engineering.
- The Center will include a modern mouse vivarium, small-animal imaging facility, and core high-throughput genomics research facilities, and will be co-located in the new building with programs in molecular medicine, pharmacology, and biomedical engineering.
- The 17 new state-funded faculty positions will include ten in experimental genomics and seven in bioinformatics and computational biology. Additional recruitments in these areas are expected in departments throughout the campus.

The Director will provide campuswide leadership for the development of research and teaching programs in genomics, and will spearhead recruitment of faculty into the Center. The Director should be a prominent scientist with a vigorous research program, and sufficient breadth of experience and interests to provide intellectual leadership to genomics programs in medicine, veterinary medicine, agriculture, and fundamental life sciences. The Director's own research program can be in any area of experimental genomics. The Director will be appointed at the professorial level in an appropriate academic department in one of six schools, colleges, or divisions. This position will remain open until filled, but for full consideration applications should be completed by September 15, 2002. Applicants should provide a letter of application, a curriculum vitae and a statement of research interests and plans, and arrange for at least three references, all to be sent to: **Dr. Craig Benham, Chair, Center Director Search Committee, UC Davis Genome Center, 2251 Academic Surge, The University of California, One Shields Avenue, Davis, CA 95616**.

Further information about genomics at UC Davis is available at **http://genomics.ucdavis.edu**

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NIMH National Training Program in Complex Systems and Brain Sciences at Florida Atlantic University Predoctoral Fellowships

Predoctoral fellowships are available, funded by NIMH Division of Basic Brain and Behavioral Sciences. Individuals with undergraduate degrees in any pertinent discipline are invited to apply for this 5-year training program leading to the Ph.D. degree in Complex Systems and Brain Sciences, and administered through the Center for Complex Systems and Brain Sciences. The aim of the Program is to couple theoretical concepts and methods for handling complex systems to specific experimental research in the cognitive and brain sciences.

Graduate training consists of a core curriculum in nonlinear dynamics, neuroscience, computational modeling and cognitive science. Research areas include sensorimotor coordination and learning, human brain imaging, including on-site functional magnetic resonance imaging, EEG, brainstem mechanisms of behavior, neural growth and development, ion channel dynamics, speech production and perception, neurolinguistics, visual perception, music perception and mathematics of complex systems.

Applicants should send a letter of interest, GRE scores, vitae and 3 letters of reference to: **Rhona Frankel, Center for Complex Systems and Brain Sciences, Florida Atlantic University, 777 Glades Road, Boca Raton, FL 33431. E-mail: frankel@walt.ccs.fau.edu. Please visit our web-site at http://www.ccs.fau.edu**

FLORIDA ATLANTIC UNIVERSITY
Davimos Family Eminent Scholar Chair in Brain Science

Florida Atlantic University (FAU) invites nominations and applications for the newly created Davimos Family Eminent Scholar Chair in Brain Science. FAU is a rapidly growing institution with a current enrollment of more than 23,000 students on seven campuses in Palm Beach, Broward and St. Lucie Counties, and is in the process of significantly expanding and strengthening research and graduate programs. The successful candidate for this endowed chair will be an internationally recognized brain scientist with a well-funded research program which will be housed in the newly renovated 25,000-square foot Center for Complex Systems and Brain Sciences on FAU's Boca Raton campus. The Center includes access to state-of-the-art computational and neuroimaging facilities (fMRI, MRI, PET, EEG), and its faculty includes cognitive and computational neuroscientists, physicists, and mathematicians. The primary responsibility of the Davimos Family Chair will be to advance work in the field of brain science, with special interest in the study of memory and brain pathology.

Applications and nominations, including a complete curriculum vitae and publication list, along with the names, addresses and telephone numbers of four references, should be sent by October 15, 2002 to: **University Provost's Office, Attn: Debra Kain, Florida Atlantic University, 777 Glades Road, Boca Raton, FL 33431-0991**. Detailed information about the position and the Center can be found at **www.ccs.fau.edu**. Please do not submit resumes via e-mail.

FLORIDA ATLANTIC UNIVERSITY IS AN EQUAL OPPORTUNITY/ACCESS INSTITUTION

MAYO CLINIC

Research Scientist: Cardiac and Vascular Biology
Rochester, Minnesota

The Department of Biochemistry and Molecular Biology, and the Division of Cardiovascular disease at Mayo Clinic Rochester have joint positions open for a junior or senior scientist with research interests in vascular or cardiac biology. The individual should have an MD or PhD and research interest in the broad field of cardiac or vascular biology as it pertains to heart failure or arteriosclerosis and thrombosis. Particular interests in cardiac development, bio-molecules that alter-regulate cardiac function, endothelial cell biology, and smooth or cardiac muscle biology are useful. Requirements include evidence of an ability to obtain extramural funding and to work in a collaborative environment with scientists, clinician-investigators and clinicians. Opportunities at Mayo include interaction with talented basic and clinical scientists with an outstanding track record in obtaining extramural federal funding, a longstanding cardiovascular training grant, and access to a wide array of clinical material and a research community. Women and minorities are encouraged to apply.

Applicants should send a curriculum vitae and a statement of research interests by e-mail or mail to:

Ms. Kristi Simmons
(CV Search)
Mayo Clinic
Guggenheim 1701
200 First St. S.W.
Rochester, MN 55905
simmons.kristi@mayo.edu

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THE BIOPHYSICS AND CHEMISTRY OF BIOLOGICAL SYSTEMS

Department of Biochemistry and Molecular Pharmacology
University of Massachusetts Medical School

The Department of Biochemistry and Molecular Pharmacology at the University of Massachusetts Medical School is pleased to announce the continuing expansion of its faculty and facilities. During the coming year, seven new tenure-track faculty positions at junior and senior levels will be available in areas that employ molecular approaches to biological problems and complement existing programs. Areas of interest include but are not limited to signal transduction, gene expression, membrane biology and macromolecular complex assembly, structure and function. Experimental and computational approaches to elucidate the structure-function relationships in these complex systems are encouraged. Candidates with a problem-oriented approach employing solution NMR spectroscopy or integrating organic synthetic chemistry into their programs are especially encouraged to apply.

Faculty will occupy space on the top two floors of a new 350,000 square foot research building that facilitates interactions with the neighboring Departments of Medicine, Cancer Biology and Neurobiology and Program in Gene Expression and Function. Departmental facilities include: Proteomics, Chemical Screening, Structural Biology and Computational Genomics. Salaries and start-up packages will be competitive and commensurate with accomplishment for both junior and senior applicants.

Junior applicants should send a cover letter explaining their interest in the department, a brief research plan and curriculum vitae. Senior applicants should also include a short description of current and future research activities and information on current grant support. Applicants should also provide the names and addresses of three individuals who are familiar with their work and potential for success. Applications will be reviewed expeditiously and interviews will begin in September. Materials may be sent electronically to: **bmpsearch@umassmed.edu** or by mail to:

Anthony Carruthers, Ph.D.,
Chair, Faculty Search Committee
Department of Biochemistry and Molecular Pharmacology
The University of Massachusetts Medical School
Lazare Research Building, Floor 9
364 Plantation St
Worcester, MA 01605

The departmental web site is located at: **http://www.umassmed.edu/bmp/**

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

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FACULTY POSITIONS

UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL

Molecular Biology
Cell Biology
Genomics/Proteomics
Bioinformatics

A major expansion of the Program in Molecular Medicine at the University of Massachusetts Medical School includes openings for SENIOR TENURED and JUNIOR TENURE-TRACK faculty positions. The Program consists of basic scientists and physician scientists representing a broad range of disciplines in the biomedical sciences, and operates as an academic department in the Medical School. The Program will expand to fully occupy its current modern building of approximately 80,000 square feet. Core facilities for tissue culture, media preparation, DNA sequencing, protein chemistry and proteomics, fluorescence-activated cell sorting, digital imaging and confocal microscopy, genomics and transgenic/knockout mice are available.

The positions will be highly competitive with regard to start-up funds, laboratory space and salary. The Program seeks individuals of outstanding research potential in the broadly defined areas of cell, developmental, molecular or structural biology; genomics/proteomics and bioinformatics; chemical and structural biology. Translational research directed by physician scientists is also a high priority.

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

Dr. Roger Davis, Search Committee Chair, or Dr. Michael P. Czech, Director
Program in Molecular Medicine
University of Massachusetts Medical School
373 Plantation Street
Worcester, MA 01605

Website (http://www.umassmed.edu/pmm/)

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

Brain Research Centre

FIVE FACULTY POSITIONS
THE BRAIN RESEARCH CENTRE
University of British Columbia and Vancouver Coastal Health Authority

The Brain Research Centre of UBC and the Vancouver Coastal Health Authority is embarking on a major expansion of its programs based on recent successes in attracting substantial infrastructure funding. We have available five full-time tenured or tenure-track faculty positions at both senior and junior levels across a broad spectrum of areas in neuroscience. Three of these positions will be Canada Research Chairs in association with the University's Neuroscience Cluster in the Faculty of Medicine. These prestigious positions are funded through a federal government program, with access to research support appropriate to the programs and goals. For more information about this program, visit **website: http://www.chairs.gc.ca/**. The other two positions will be supported through our endowment fundraising initiatives.

Applications are invited in the areas of stroke, mood disorders, neuroprotection, neurodegenerative disorders, postnatal brain development, neuronal plasticity, synaptic mechanisms, and cell signaling. The Centre specifically encourages individuals using brain imaging and/or genomic/proteomic strategies to apply. The expected start date for these appointments is July 1, 2003, or July 1, 2004. Salary will be commensurate with qualifications and experience.

Applicants should submit curriculum vitae, the names of three references, and a statement of current research interests and future plans to: **Dr. Max Cynader, Director, Brain Research Centre, University of British Columbia and Vancouver Coastal Health Authority, 2211 Wesbrook Mall, Vancouver, BC V6T 2B5 Canada. FAX: 604-822-0361; e-mail: cynader@brain.ubc.ca**. Deadline for applications is December 1, 2002.

The University of British Columbia hires on the basis of merit and it is committed to Employment Equity. We encourage all qualified persons to apply; however, Canadians and permanent residents of Canada will be given priority. Please note that there is no restriction with regard to nationality or residence for Canada Research Chair positions, and such positions are open to all candidates. These offers will be made in keeping with immigration requirements associated with the Canada Research Chairs program.

ASSISTANT PROFESSOR
BIOLOGY

The Chemistry Department of the United States Naval Academy invites applications for a tenure-track position in biology at the Assistant Professor level to begin no later than August 2003. The Department consists of 38 full-time faculty members, is equipped with a wide array of modern chemical instrumentation and computer facilities, and supports an ACS-approved undergraduate chemistry major with planning underway for a biochemistry option. The successful applicant must be strongly committed to teaching at the undergraduate level and will be expected to help develop and teach biology and biochemistry courses on a rotating basis with four existing Biochemists. In addition, the candidate of choice will be expected to develop and maintain a vigorous research effort. The ability to teach general chemistry is desirable. Candidates should send curriculum vitae; statement of teaching philosophy; concise description of research/scholarly interests; and arrange for three letters of recommendation (at least one of which addresses teaching) to be sent by October 15, 2002, to: **Search Committee, Chemistry Department, U.S. Naval Academy, 572 Holloway Road, Annapolis, MD 21402-5026**. *The U.S. Naval Academy is committed to identifying minority persons and women with the appropriate qualifications and is an Equal Opportunity/Affirmative Action Employer. This agency provides reasonable accommodations to applicants with disabilities.*

POSITIONS OPEN

University of Nebraska Medical Center

FACULTY POSITIONS
CANCER RESEARCH

The Eppley Institute for Research in Cancer of the University of Nebraska Medical Center (UNMC) is seeking Faculty to conduct research in three general areas. These faculty appointments are tenure-track with academic rank based on candidate's qualifications. (1) Basic cancer research: all areas of molecular, cellular or structural biology related to cancer. (2) Cancer prevention: molecular, genetics, and/or genomics-based approaches to cancer prevention. (3) Tumor immunology: basic or clinical aspects of tumor immunology.

The Eppley Institute is an academic unit of UNMC and a key component of the UNMC Eppley Cancer Center, an NCI-designated cancer center. Both the Eppley Institute and Cancer Center are in a dynamic growth phase. Applicants should possess a Ph.D., M.D., or other terminal degree and appropriate postdoctoral training. Successful applicants will be expected to develop funded laboratory research programs, collaborate with other faculty, and participate in the pre- and postdoctoral training programs of the Eppley Institute including an NCI-funded cancer research training program and a DOD-funded breast cancer training program.

Applicants should indicate which position they are applying for and forward complete curriculum vitae, a three-page description of research accomplishments and future research plans, and a minimum of three letters of reference to: **Dr. Kenneth H. Cowan, Director, Eppley Institute for Research in Cancer, University of Nebraska Medical Center, 986805 Nebraska Medical Center, Omaha, NE 68198-6805**. Review of applications will begin August 15, 2002, and will continue until the positions are filled. See **website: http://www.unmc.edu/Eppley/** for more information. *The University of Nebraska Medical Center is an Equal Opportunity Employer.*

ASSISTANT RESEARCH PROFESSORS AND POSTDOCTORAL RESEARCH ASSOCIATES
Environmental Genomics and Cell Modeling
Environmental Biotechnology Center
University of Massachusetts

Multiple positions are available to participate in a multidisciplinary study applying genome-enabled approaches to investigate the physiology and the environmental function of microorganisms in the *Geobacteraceae*. Microbial communities dominated by *Geobacteraceae* are important in bioremediation of metal and organic contaminants in subsurface environments and are capable of harvesting electrical energy from waste organic matter (**website: http://www.geobacter.org**). Research will take advantage of the availability of the genomes for as many as 10 pure cultures of *Geobacteraceae*, whole genome DNA microarrays for each of these organisms, detailed proteomics analysis, and the genetic system we have developed for these organisms. Furthermore, environmental genomic data representing circa 400 million base pairs of sequenced *Geobacteraceae* environmental genomic DNA and accompanying DNA microarrays will be available for investigations of genetic potential and gene expression in subsurface environments and on energy-harvesting electrodes. Pure culture and environmental genomic and expression studies will serve as the basis for modeling efforts.

Primary requirements are experience in some aspect of microbial physiology, genetics, or genome-enabled science. Recent Ph.Ds will be hired at the Postdoctoral level. Candidates with prior postdoctoral experience are eligible to be hired at the rank of Assistant Research Professor. Appointments for up to five years are immediately available. Please contact: **Derek Lovley, e-mail: dlovley@microbio.umass.edu**. *The University of Massachusetts is an Affirmative Action/Equal Opportunity Employer. Women and members of minority groups are encouraged to apply.*

POSITIONS OPEN

FACULTY POSITION
EXPERIMENTAL PATHOLOGY
Brown University School of Medicine

The Department of Pathology and Laboratory Medicine at Brown University School of Medicine invites applications for a three-year renewable, tenure-track, campus-based position as **ASSISTANT PROFESSOR** or a tenured position as **ASSOCIATE PROFESSOR**. The candidate is expected to develop and maintain a productive, independent, externally funded research program in basic mechanisms of human disease. Preference will be given to candidates with research training in environmental pathology or cancer biology who can serve as predoctoral and postdoctoral research mentors for a training program in environmental pathology funded by the National Institute of Environmental Health Sciences. Board certification in anatomic and/or clinical pathology and ability to teach systemic pathology is desirable. Teaching responsibilities include teaching, training, and advising undergraduate, graduate, and medical students. Candidates should have an M.D., Ph.D., or M.D.-Ph.D. degree and two to three years of postdoctoral or residency research training. Modern research laboratories, core facilities, and start-up funds are available. Applications received by January 1, 2003, will receive full consideration. Applicants should send curriculum vitae, recent publications, a description of career objectives and future research plans, and three letters of recommendation to: **Agnes B. Kane, M.D., Ph.D., Professor and Chair, Department of Pathology and Laboratory Medicine, Brown University School of Medicine, Box G-B5, Providence, RI 02912**. *Brown University is an Equal Opportunity/Affirmative Action Employer. Women, minorities, and protected persons are encouraged to apply.*

DIRECTOR, NONMAJORS BIOLOGY PROGRAM
Tenure Track

California State University, Fullerton, Department of Biological Science, is seeking applicants for a full-time, tenure-track position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level to begin August 2003 to coordinate general education (GE) courses in biology. The successful applicant must have a Ph.D. in biology with an interest in teaching biology to nonmajors and in coordinating the teaching activities of part-time faculty and graduate students. Research may be in any area of biology but research in teaching undergraduate biology is preferred and should involve undergraduate and graduate students and result in publications in refereed journals. Teaching responsibilities include undergraduate courses in biology, participation in the training of teaching assistants, and development of upper-division or graduate courses in the faculty member's area of expertise. The successful candidate is expected to pursue extramural funding to support teaching and research interests. Information about the Department and campus is available through the Department's **website: http://biology.fullerton.edu**. Applicants should send a letter that explains how they meet the qualifications outlined above; curriculum vitae; a statement about teaching/curricular plans, teaching philosophy, and research plans and goals; copies of two publications; and three letters of recommendation from individuals familiar with their teaching and research potential to: **Chair, GE Search Committee, Department of Biological Science, California State University, Fullerton, P. O. Box 6850, Fullerton, CA 92834-6850.** Review of applicants will begin October 1, 2002, and continue until a suitable candidate is appointed. Salary is competitive and commensurate with experience and qualifications. *CSUF is an Affirmative Action/Equal Opportunity/Title IX/Americans With Disabilities Act Employer. Women and minority candidates are particularly encouraged to apply.*

GLOBAL OPPORTUNITIES

CAMBIA

The Center for the Application of Molecular Biology to International Agriculture is a unique private non-profit research organization located in Canberra, Australia. In the past CAMBIA has been responsible for developing some of the most widely used technology in the world including GUS, the ultimate reporter gene. CAMBIA currently develops and delivers enabling technologies for agricultural biotechnology using IP-based strategy to empower diverse innovators worldwide. The Center is located in an extremely attractive and stimulating environment adjacent to the National Botanic Gardens and close to a number of other research and educational institutions, including CSIRO and the ANU (see **www.cambia.org**). CAMBIA is a well-established research institute consisting of 40 staff, postgraduate students and visiting scientists. We pride ourselves on our multicultural environment with staff from 16 different countries, state-of-the-art lab facilities and great cappuccino!

With substantial new support from The Rockefeller Foundation, CAMBIA is looking to expand our highly motivated international team.

Due to relocation of a senior staff member to CAMBIA's USA office we are looking to fill the key position of

SENIOR MANAGER
LICENSING AND PATENT STRATEGY

The ideal candidate will have a strong biotechnology industry and IP background with experience in technology development and in creative licensing and negotiation, ideally in agriculture. Duties will include guiding CAMBIA's licensing strategy, negotiation and implementation, direct responsibility for guiding freedom-to-operate IP landscape analyses to be included in the CAMBIA Intellectual Property Resource (**www.cambiaIP.org**) and acting in the role of Deputy CEO as and when required.

We invite applications from candidates with substantial bioscience knowledge who have hands-on experience in the prosecution, licensing and management of intellectual property and who are genuinely interested in the provision of enabling technologies for the public good. The ideal candidate will have a higher degree (PhD preferred) and legal or patent qualifications. This position offers you a unique challenge and an opportunity to do real good in the world.

Salary for this position is likely to be in the range of AUD120,000-150,000 per annum, but is negotiable and will reflect the significance of the appointment to CAMBIA's operations, the experience of the appointee and the status of CAMBIA as a non-profit organization.

Our Molecular Technologies group is seeking a creative, motivated individual to join our growing team inventing new methods for effective gene transfer to plants. This group aims to develop molecular biology tools for agricultural use, although the technology may also be applied in other areas.

SENIOR SCIENTIST
AUD55,000–65,000 plus superannuation

We wish to appoint a Senior Scientist to join a small team working towards developing new technologies for effective gene transfer to crop plants, which can be provided with minimal IP constraints to diverse innovators in public and private sectors.

Candidates should have a PhD in plant or microbial genetics or molecular biology and postdoctoral research experience. The successful applicant will ideally have research experience with microbial genome manipulation and proven technical ability for creative molecular manipulation. Experience with the molecular genetics of *Agrobacterium* or other members of the *Rhizobiaceae*, and plant transformation would be particularly helpful. Applicants with industry experience will be particularly welcomed.

Both appointments are for an initial term of 2 years with possible long-term extension. To apply please send your CV setting out details of your experience, skills and qualifications together with the names of two referees to: **The General Manager, CAMBIA, GPO Box 3200, Canberra ACT 2601 Australia; by fax 61 (0)2 6246 4533 or by email c.pratt@cambia.org**.

St. Elizabeth's Medical Center of Boston
CARITAS CHRISTI HEALTH CARE

DIRECTOR, STEM CELL THERAPY PROGRAM INVESTIGATORS
Molecular Medicine and Gene Therapy
Outstanding Faculty Opportunities in Boston

Tufts Medical School/St. Elizabeth's Medical Center, Cardiovascular Division, seeks individuals at **ASSISTANT, ASSOCIATE,** and **FULL PROFESSOR** levels with expertise in molecular and cell biology, stem cell biology, and neurovascular biology including gene discovery and bioinformatics. Positions for both M.D.s and Ph.D.s. Extremely competitive salary support to join Investigators with track record for successful translational research including NIH-funded center for excellence in gene therapy. Attractive seed support and space to accommodate productive research teams. Flexibility to facilitate innovative programmatic goals.

Please send curriculum vitae to: **Douglas W. Losordo, M.D., 736 Cambridge Street, Boston, MA 02135. Telephone: 617-788-3346; FAX: 617-779-6362; e-mail: douglas.losordo@tufts.edu.**

FACULTY POSITION MOLECULAR AND CELLULAR PHARMACOLOGY
School of Medicine
University of Miami

The Department of Molecular and Cellular Pharmacology at the University of Miami School of Medicine is seeking applications for a tenure-track faculty position (rank open). Rank and salary will be commensurate with experience. Excellent laboratory space and start-up funds are available. Candidates must have a Ph.D. and/or M.D. degree and have an established record of research excellence. Applicants from all areas of molecular/cellular biology and biomedical research are welcome. The new faculty member will complement existing research efforts in the Department, which include regulation of cardiac and skeletal muscle function, ion channels, receptors and signal transduction, function and development of the nervous system, and steroid hormone action.

Applicants should send curriculum vitae, description of current and future research interests, and the names and addresses of three references to: **Dr. James D. Potter, Chairman, Department of Molecular and Cellular Pharmacology, University of Miami School of Medicine, P.O. Box 016189, Miami, FL 33101. E-mail: elalor@med.miami.edu.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS IN IMMUNOLOGY
Duke University Medical Center

The Department of Immunology invites applications for tenure-track faculty positions at all levels. Candidates working in host defense, models of human disease, molecular and cellular immunology, cancer immunobiology, and lymphocyte signal transduction and development are encouraged to apply. Interested individuals should send curriculum vitae, a statement of research interest, and the names of three references to:

Dr. Thomas E. Tedder
Department of Immunology
P.O. Box 3010
Duke University Medical Center
Durham, NC 27710
Website: http://immunology.mc.duke.edu

Duke University Medical Center is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

DIRECTOR
U.S. Geological Survey
Great Lakes Science Center

The U.S. Geological Survey's Great Lakes Science Center in Ann Arbor, Michigan, invites applications for its Center Director. He/she is responsible for managing a broad, multidisciplinary program of biological research, monitoring, and information management on the Great Lakes and for enhancing and supporting natural resource partnerships between the Center and states, tribes, other federal agencies, and private groups. The Center consists of the main laboratory in Ann Arbor, Michigan; eight field stations; and a fleet of large research vessels with research emphasis in fisheries biology and ecology, fish community stock assessment, coastal and wetland ecology, predator-prey relationships, and nonindigenous species biology. Applicants require extensive professional knowledge of biology and ecology, skill in supervising professional and administrative staff, and ability in managing a federal research facility. *This announcement is open to all U.S. citizens.* Salary: $94,728 to $123,149. Closing date: Applications must be submitted (online only) by midnight Eastern Standard Time Sunday, October 6, 2002. View the full text vacancy announcement or apply for this position at **website: http://www.usgs.gov/ohr/oars**. For further information, contact: **USGS Eastern Region Personnel Office; Telephone: 703-648-4402; e-mail: lshaver@usgs.gov**. *The Federal Government is an Equal Opportunity Employer.*

BIOCHEMISTRY. The Department of Chemistry at John Carroll University (**website: http://chemistry.jcu.edu**) invites applications for a tenure-track **ASSISTANT PROFESSOR** position beginning August 2003. A Ph.D. in biochemistry is required. Some previous teaching experience is preferred. The successful candidate is expected to teach biochemistry courses and laboratory, introductory-level chemistry courses, participate in the University's strong biochemistry/molecular biology concentration, and establish an active undergraduate research program that results in publication. The Department is well equipped in chemical and biochemical instrumentation, is currently an NSF-REU site, and will move into the new Dolan Center for Science and Technology upon its completion in fall 2003. John Carroll University is a privately controlled, coeducational, Catholic and Jesuit University located in the eastern suburbs of Cleveland, Ohio. Curriculum vitae, undergraduate and graduate transcripts, three letters of recommendation, a statement of teaching philosophy, a description of proposed research, and equipment needs should be sent to: **Dr. Paul R. Challen, Chair, Department of Chemistry, John Carroll University, The Jesuit University in Cleveland, University Heights, OH 44118**. Review of applicants will begin October 14, 2002, and we anticipate holding interviews in November 2002. *John Carroll University is an Equal Opportunity/Affirmative Action Employer.*

CHAIR, DEPARTMENT OF PEDIATRICS
The University of Texas Southwestern Medical Center at Dallas

The University of Texas Southwestern Medical Center at Dallas is initiating a search for a new Chair of the Department of Pediatrics. UT Southwestern is a premier academic institution that counts among its faculty four Nobel Laureates, 13 members of the National Academy of Sciences, and 12 members of The Institute of Medicine.

Candidates should have an established national record of achievement in academic pediatrics and be prepared to lead the Department in UT Southwestern's multidepartmental quest for excellence.

Curriculum vitae and a list of three references should be sent to: **Eric J. Nestler, M.D., Ph.D., Department of Psychiatry, UT Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75390-9070.**

The University of Texas Southwestern Medical Center is an Equal Opportunity Employer.

POSITIONS OPEN

FACULTY POSITIONS
Biomolecular Chemistry
University of Wisconsin Medical School

We invite applications for two tenure-track positions at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level beginning 2003/2004. We seek colleagues eager to establish vigorous biochemical/molecular biological research programs of medical significance and to teach at several levels. Deadline to ensure consideration is October 15, 2002. Send curriculum vitae, a two-page research plan, and three letters of reference to: **Dr. James E. Dahlberg, Search Chair, Biomolecular Chemistry, 587 MSC, UW Medical School, 1300 University Avenue, Madison, WI 53706-1532. E-mail: twiklund@wisc.edu; website: http://www.bmolchem.wisc.edu.** *Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.*

MOLECULAR AND BIOMEDICAL PHARMACOLOGY

The Department of Molecular and Biomedical Pharmacology, University of Kentucky College of Medicine at Lexington, is seeking qualified applicants for a tenure-track position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. We encourage applications from candidates utilizing modern molecular approaches in the study of cancer biology. Areas of specific interest include but are not restricted to regulation of oncogene and tumor suppressor genes, classical and transgenic/knockout models of oncogenesis and malignant progression, nuclear/steroid receptors, and cell signaling and cell cycle progression. However, candidates with interests in other important areas of biomedical research such as neurodegeneration, cardiovascular disease, and aging will also be considered. Competitive candidates should have a Ph.D. or M.D. with several years of postdoctoral experience and should have a clear record of research productivity and creativity commensurate with experience level. The successful candidate will be expected to develop a dynamic, well-funded research program as well as contribute to pharmacology teaching programs for professional and graduate students. Interested candidates should send curriculum vitae and the names, addresses, and telephone numbers of three references to: **Faculty Search Committee, Department of Molecular and Biomedical Pharmacology, University of Kentucky College of Medicine, MS-305 Medical Center, Lexington, KY 40536-0298.**

California Institute of Technology invites applications for one tenure-track faculty position at the interface of chemistry with the biological sciences. Appointment in the Division of Chemistry and Chemical Engineering is anticipated. Candidates proposing interdisciplinary research programs in biochemistry and biophysics are of particular interest, and strong interactions with other Divisions of the Institute are expected. Initial appointment at the **ASSISTANT PROFESSOR** level will be for four years with serious consideration given to exceptionally well-qualified applicants at the **ASSOCIATE** and **FULL PROFESSOR** levels. Joint appointments in other divisions may be arranged as appropriate. Appointment will be contingent upon completion of all requirements for a Ph.D. in chemistry or a closely related field. Outstanding candidates who have strong commitments to research and teaching are encouraged to apply. Submit curriculum vitae; a publication list; a concise description of proposed research; and three letters of recommendation by October 15, 2002, to: **Chair of Biochemistry/Biophysics Faculty Search Committee, Mail Code 147-75, California Institute of Technology, Pasadena, CA 91125.** *The California Institute of Technology is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*

SIU

SOUTHERN ILLINOIS UNIVERSITY
Carbondale

Tenure Track, Faculty Position
Biochemistry and Molecular Biology

The Department of Biochemistry and Molecular Biology at Southern Illinois University Carbondale, School of Medicine invites applications for a tenure track position at the Assistant or Associate Professor level. The candidate's research program should be in areas such as signal transduction, programmed cell death or eukaryotic gene regulation with an emphasis on understanding biochemical and molecular biological aspects of disease. Special consideration will be given to those who use genomic and/or proteomic approaches. Applicants must have a M.D. or Ph.D. in life sciences or related area. We will give preference to those with two or more years of postdoctoral experience. The candidate will have the opportunity to participate in the Center for Alzheimer Disease and Related Disorders and in the newly established SIU Cancer Institute. The ability to develop an active, externally funded research program and to contribute to teaching medical and graduate students is essential. The position is a 12-month appointment with a competitive salary, excellent facilities and substantial start-up funds.

All applicants must submit curriculum vitae, one page research plan and three letters of reference to: **Dr. Joseph C. Schmit, Chair, Dept. of Biochemistry and Molecular Biology, 1245 Lincoln Drive, Neckers Room 229C, Southern Illinois University School of Medicine, Carbondale, IL 62901-4413; jschmit@siumed.edu**. Application review will begin November 15, 2002 and continue until the position is filled.

Southern Illinois University Carbondale is an Equal Opportunity/ Affirmative Action Employer.

Mass Spectrometrist
NIDDK, NIH/DHHS

With nation-wide responsibility for improving the health and well being of all Americans, the Department of Health and Human Services oversees the biomedical research programs of the National Institutes of Health and those of NIH's research Institutes. The Laboratory of Bioorganic Chemistry, NIDDK, NIH/DHHS, is seeking a chemist (GS-11) to operate and maintain a state-of-the-art mass spectrometry facility. The successful candidate will be responsible for operation and maintenance of a magnetic sector (JEOL SX102) and quadrupole (Finnigan 4600) mass spectrometer and will provide mass spectrometry services for biomedical researchers of the Laboratory of Bioorganic Chemistry and other personnel of NIDDK and NIH. A broad spectrum of compound types presents challenges and opportunities for the incumbent to make significant contributions to research projects. A degree in physical or life sciences and professional knowledge of biology, organic chemistry, and biochemistry related to mass spectrometry techniques, and experience in acquisition and interpretation of mass spectra. are required. The Laboratory of Bioorganic Chemistry is located on the main intramural campus of the NIH in Bethesda, Maryland, a suburb of Washington, D.C. Interested applicants should contact Ms. Deirdre Davis, National Institutes of Health, NIDDK Human Resources Office, 6707 Democracy Blvd., Suite 700N MSC 5451, Bethesda, MD 20892-5451 (301 496-4231). NIH is an equal opportunity employer. **Applications to be post-marked by September 13, 2002.**

NIDDK

NATIONAL INSTITUTES OF HEALTH

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

MAYO CLINIC

CLINICAL PSYCHIATRIC INVESTIGATOR
Rochester, Minnesota

The MAYO CLINIC is pursuing a national search for an outstanding psychiatric investigator to join a research team that is developing an integrated program of clinical research focusing on mood disorders but involving a broad spectrum of additional psychiatric disorders. Expertise in psychiatric genetics and interest in genomic investigations is important given the development of the programmatic priorities of the Department and Clinic. Demonstrated competence in the initiation and conduct of clinical research and evidence of successful extramural funding support is essential.

New research facilities within the Department at the Mayo Clinic have been developed and support for research staff and operations is available. The compensation package at the Mayo Clinic is highly competitive and includes exceptional professional benefits. The successful candidate will also receive an academic appointment at the Mayo Medical School.

For further information, please send a detailed letter describing your research interests and a complete curriculum vitae by e-mail or traditional mail to:

David A. Mrazek, M.D., F.R.C. Psych.
Professor and Chair
Department of Psychiatry and Psychology
Mayo Clinic
200 First Street SW
Rochester, MN 55905
E-mail: mrazek.david@mayo.edu

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

SCHOOL OF MEDICINE · UC DAVIS

University of California Davis
School of Medicine
Opportunities in Immunology and Genomics

The UC Davis School of Medicine, Department of Medical Microbiology and Immunology invites applications from highly (Ph.D., M.D./Ph.D. or M.D.) qualified individuals for two (2) tenure-track faculty positions at the **ASSISTANT** or **ASSOCIATE/FULL PROFESSOR** level to develop research programs in (i) immunology and (ii) genomics of host-pathogen interactions and pathogenesis. The successful applicants will have relevant post-doctoral experience, high quality peer reviewed publications and will be expected to establish and maintain a high quality, extramurally funded research program. We seek individuals who use molecular genetics, genomics, proteomics, molecular and cellular immunology to answer fundamental questions about molecular and cellular aspects of host-pathogen interactions and pathogenesis. Applicants with expertise or interest in mucosal immunology are particularly desirable. Successful candidates will participate in establishing research programs bridging immunology, microbiology, genomics and emerging infectious diseases. The positions offer competitive start-up funds and access to core facilities for genomics, immunology and microbiology research, and the National Primate Research Center.

The positions will be open until filled, but no later than March 1, 2003. Priority will be given to candidates whose records of innovative research and commitment to teaching demonstrate their potential as leaders in their fields. Candidates will be expected to participate in teaching immunology and/or molecular biology courses to medical, graduate, and undergraduate students. Applicants should send a curriculum vitae, up to three representative reprints, a brief statement of research interests and should arrange for three to five letters of reference to be sent to: **Dr. Satya Dandekar, Chair, Department of Medical Microbiology & Immunology, School of Medicine, University of California, One Shields Avenue, Davis, CA 95616-8645.**

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

ASSISTANT PROFESSOR
Amherst College
Environmental or Materials Chemistry

The Amherst College Department of Chemistry (**website: http://www.amherst.edu/~chemistry/**)invites applications for a full-time, tenure-track faculty position in environmental or materials chemistry beginning in July 2003. The position requires a Ph.D. in the chemical sciences and calls for teaching at the introductory and advanced undergraduate levels. Opportunities for teaching in interdisciplinary courses and programs are also available. The successful candidate will be expected to establish a vigorous research program in which undergraduates can substantively participate. The research program can be drawn from any chemical discipline provided that it focuses either on the environment or on materials, and it can span the boundaries between chemistry and other sciences. Amherst College is a private, liberal arts institution of some 1,600 students and 165 faculty located in the Connecticut River Valley of western Massachusetts. It participates with Hampshire, Mount Holyoke, Smith Colleges, and the University of Massachusetts in the Five-College Consortium. The College enrolls students from nearly every state and from over 40 countries; greater than 30 percent of Amherst's students are students of color. Amherst became fully coeducational in 1976; at present women comprise 49 percent of its students. Applicants should submit curriculum vitae, undergraduate and graduate transcripts, a statement of teaching philosophy, and a detailed description of their research plans, and should arrange for the forwarding of three letters of reference to: **Professor David E. Hansen, Chair, Department of Chemistry, Campus Box 2243, Amherst College, Amherst, MA 01002**. Review of materials will begin October 28, 2002. *Amherst College is an Affirmative Action/Equal Opportunity Employer and encourages women, minorities, and persons with disabilities to apply.*

ASSISTANT PROFESSORSHIPS IN ORGANIC CHEMISTRY AND CHEMICAL BIOLOGY
Harvard University Department of Chemistry and Chemical Biology

Applicants are invited to apply for Assistant Professorships in organic chemistry and chemical biology. Fields of particular interest include organic synthesis, catalysis, organic materials, chemical biology, and macromolecular structure and function, although candidates in all areas of organic chemistry, broadly defined, will be considered. Applicants should arrange to have three letters of recommendation sent independently and should provide curriculum vitae, a list of publications, and an outline of their future research projects. Applications and supporting materials should be sent to: **Chair, c/o Ms. Carol Gonzaga, Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138-2902**. The deadline date for receipt of applications and supporting materials is November 30, 2002. *Harvard University is an Affirmative Action/Equal Opportunity Employer and welcomes applications from women and minority group members.*

University of California San Diego School of Medicine: **ASSISTANT ADJUNCT PROFESSOR** position (one) available at the University of California, San Diego, in the Division of Gastroenterology, Department of Medicine. Position will encompass research activity at UCSD Medical Center, teaching, and participation in an intestinal transport research program. Expertise in membrane transport including relevant methodologies. The level of appointment will be commensurate with candidate's qualifications and experience. Salary will be based on established UCSD salary scales. Reply by September 20, 2002, or until position is filled. Send curriculum vitae including a list of three references to: **Jon Isenberg, M.D., UCSD Medical Center, Gastroenterology Division 8413, 200 West Arbor Drive, San Diego, CA 92103-8413. E-mail: jisenberg@ucsd.edu; Telephone: 619-543-2675**. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

MOLECULAR GENETICIST/GENOMICIST
Cancer Research Center of Hawaii

The Cancer Research Center of Hawaii (**website: http://www.crch.org**), an NCI-designated cancer center at the University of Hawaii, invites applications for a tenure-track faculty position in the area of genomics and human genetics. Applicants in the areas of complex disease gene mapping and large-scale approaches to genomics are particularly encouraged to apply. The successful applicant will be expected to establish an independent genetics research program that will complement existing research in clinical and population sciences and to serve as the Director of the Center's Genomics Shared Resource. The unique ethnic diversity of Hawaii's population and the availability of large epidemiological biorepositories and DNA array and sequencing facilities provide for excellent opportunities. Minimum requirements: M.D. or Ph.D. degree and an excellent record of active research and publications. Rank (**ASSISTANT** or **ASSOCIATE PROFESSOR**) and salary commensurate with qualifications and experience. To apply, send letter of application, curriculum vitae, statement of research interests, and the names and addresses of three references to: **Loïc Le Marchand, M.D., Ph.D., Chair, Genomicist Search Committee, Cancer Research Center of Hawaii, 1236 Lauhala Street, Honolulu, HI 96813**. Inquiries at **Telephone: 808-586-2988; e-mail: loic@crch.hawaii.edu**. Closing date: Position will remain open until filled; however, first review of applications will begin November 15, 2002. *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR
CHEMICAL EDUCATION
McMaster University
Department of Chemistry

McMaster University invites applications for a three-year, contractually limited appointment at the Assistant Professor level to commence in April 2003 or earlier. Applicants must hold a Ph.D. at the time of appointment and have a strong commitment to undergraduate education. The main duties will involve teaching general chemistry at the first-year level, higher-level courses in their primary area(s) of expertise if required, and participation in undergraduate curriculum development. There is no expectation that the candidate will develop an independent research program or engage in collaborative research. Applications including curriculum vitae and letters from three references should be sent by September 30, 2002, to: **Dr. W.J. Leigh, Chair, Department of Chemistry, McMaster University, Hamilton, Ontario, L8S 4M1 Canada. Telephone: +1-905-525-9140, Extension 24504; FAX: +1-905-522-2509**.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. McMaster University is committed to Employment Equity and encourages applications from qualified men and women, members of visible minorities, aboriginal peoples, and persons with disabilities.

California Institute of Technology invites applications for a tenure-track position as **ASSISTANT PROFESSOR** specializing in inorganic chemistry with an initial appointment of four years, contingent upon completion of all requirements for a Ph.D. in chemistry or other related field. Outstanding candidates with a strong commitment to research and teaching excellence are encouraged to apply. Submit curriculum vitae, publications list, a description of proposed research, and three letters of recommendation to: **Chair of the Inorganic Chemistry Search Committee, Mail Code 127-72, California Institute of Technology, Pasadena, CA 91125**. Applications should be received by November 1, 2002. *The California Institute of Technology is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*

POSITIONS OPEN

FACULTY POSITION
DEVELOPMENTAL NEUROBIOLOGIST

The Department of Biology at Occidental College invites applications for a tenure-track faculty position in developmental neurobiology. Rank and salary are subject to qualifications. Applicants should have a strong commitment to educating undergraduates through teaching and research. The successful candidate is expected to develop a rigorous research program in developmental neurobiology using a molecular approach. S/he will teach two of the following classes per year: introductory cell and molecular biology, an intermediate course in either developmental or cell biology, and an upper-level course in neurobiology. The new faculty member is expected to participate regularly in interdisciplinary programs such as biochemistry, cognitive science, the core program, psychobiology, or women's sudies. Occidental is a nationally ranked, small liberal arts college with excellent research and teaching facilities, located in Los Angeles, California, near Caltech and other research institutions. Occidental is nationally recognized for its broadly diverse student body and faculty and for its outstanding undergraduate research program. For more information on Occidental College, visit our **website: http://www.oxy.edu**; a more detailed job advertisement can be found at **website: http://departments.oxy.edu/cogsci/neuro/default.htm**. Send curriculum vitae, separate statements of research and teaching interests, copies of significant publications, and have three letters of reference sent to: **Dr. Roberta Pollock, Department of Biology, Occidental College, 1600 Campus Road, Los Angeles, CA 90041**. Review will begin October 7, 2002, and continue until the position is filled. *Occidental is deeply committed to Affirmative Action. Women and minorities are particularly encouraged to apply.*

ASSISTANT PROFESSOR
Immunopathogenesis
Department of Microbiology and Immunology
Medical College of Ohio

Applications are invited for a 12-month tenure-track faculty position. The successful candidate is expected to develop an independent, extramurally funded research program in an area related to immune response to microbial infection. In addition to teaching medical and graduate students, the successful candidate will be expected to participate in existing bacterial and fungal pathogenesis programs within the Department.

The Department is in a growth phase with focus on the development of immunology. MCO is a state school with a modern campus. To learn more about the Department and MCO, visit our **website: http://www.mco.edu**. Applicants should submit a statement of research goals with representative reprints, curriculum vitae, and three letters of recommendation to: **Garry T. Cole, Ph.D., Chair, Department of Microbiology and Immunology, Medical College of Ohio, 3055 Arlington Avenue, Toledo, OH 43614-5806**. Applications should be received by September 1, 2002. *Affirmative Action/Equal Opportunity Employer.*

The Harvey Mudd College Chemistry Department invites applications for a tenure-track appointment at the **ASSISTANT PROFESSOR** level to begin August 2001. Applicants must have the Ph.D. degree and postdoctoral or industrial experience is desirable. Only applicants with a background and interest in organic chemistry will be considered. The successful candidate must have a strong commitment to undergraduate teaching at all levels and to an active undergraduate research program in any subdiscipline of organic chemistry including bioorganic chemistry. Send résumé, transcripts (undergraduate and graduate), description of teaching and research plans, and three letters of recommendation to: **Dr. G. William Daub, Department of Chemistry, Harvey Mudd College, Claremont, CA 91711**. Consideration of candidates will begin on November 1, 2002. *Harvey Mudd College is an Equal Opportunity Employer and is committed to the recruitment of candidates traditionally underrepresented on college faculties.*

Memorial
University of Newfoundland

DIRECTOR: OCEAN SCIENCES CENTRE, FACULTY OF SCIENCE

Memorial University (**http://www.mun.ca**) invites applications for a renewable three-year term as Director of the Ocean Sciences Centre (OSC). The position will be filled at a rank appropriate to the experience of the candidate. The Director reports directly to the Dean of Science.

The Ocean Sciences Centre (**http://www.mun.ca/osc/**) is recognized internationally for cold-ocean research programs in marine biology, physiology and biochemistry, chemical, biological and fisheries oceanography, fish behaviour and aquaculture. The OSC has a core faculty of 9 professors and 47 staff members. Forty-five graduate students from various departments presently conduct thesis work at the Centre.

The Director is responsible for the operation and administration of the OSC and its programs, will provide intellectual leadership and can have a major impact on the future of graduate education in marine science at one of Canada's leading ocean universities. The successful candidate will have demonstrated administrative skills and a record of outstanding research achievement in any one of the focal areas of the OSC, and will be expected to maintain an active research program.

Letters of application, including a statement of how the OSC might evolve under one's Directorship, a curriculum vitae and the names of three referees, should be sent to: **Dr. Don Deibel, Chair, Director of OSC Search Committee, c/o Office of the Dean of Science, Memorial University, St. John's, Newfoundland, Canada A1B 3X7; ddeibel@mun.ca.**

Review of applications will begin on 28 October, 2002, and continue until a suitable candidate has been found. The position will be effective 1 January 2003, or the earliest date thereafter.

Memorial University is committed to employment equity and encourages applications from qualified women and men, visible minorities, aboriginal people and persons with disabilities. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

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

POSTDOCTORAL POSITION (REQ #2657)

The primary goal of our multidisciplinary team is to develop and apply novel high-throughput technologies to study biological problems, especially topics with clinical relevance. A postdoctoral position is available to study the pharmacologically important genetic polymorphisms. Approaches include developing subtraction and cloning-based or microarray-based high-throughput methods to discover functionally significant genetic polymorphisms, applying these methods to survey a study population and following-up with in-depth study of their functional consequence. Bioinformatics techniques will be applied to the methods development. Highly motivated individuals with a Ph.D. in molecular biology, human genetics, pharmacology or related fields are encouraged to apply.

St. Jude Children's Research Hospital has a highly interactive research environment and state-of-the-art facilities. We offer competitive stipends as well as a benefit package that includes professional development funds for journal subscriptions and travel to meetings. Candidates should submit a letter of interest, curriculum vitae, and the names of three references, indicating REQ #2657, to:

Jiong Zhang, Ph.D. • Assistant Member
Hartwell Center for Biotechnology and Bioinformatics
St. Jude Children's Research Hospital
332 N. Lauderdale St. • Memphis, TN 38105
E-mail: jiong.zhang@stjude.org

St. Jude is an equal opportunity/affirmative action employer.

www.stjude.org

MEDICAL COLLEGE OF WISCONSIN

Tenure Track Faculty Position in Cellular/Molecular Neurobiology

Medical College of Wisconsin Department of Cell Biology, Neurobiology and Anatomy and Cardiovascular Research Center

A tenure track faculty position at the Assistant and/or Associate Professor level is available for a neurobiologist that uses cellular, molecular, developmental and/or genetic approaches. Competitive salary, laboratory space and start-up funds are available. Candidates at the Associate Professor level would be expected to have an established research program with significant extramural funding. Individual research programs in photoreceptor biology, color vision, functional imaging, cardiac development, differentiation of neural crest, muscle development, early embryology of the mouse and mitochondrial gene expression in visual cortex are already established. The successful candidate must show promise in establishing a distinguished research career using modern technical approaches and an ability to focus on fundamental questions central to the field of cellular/molecular neurobiology. Opportunities exist to study mechanisms controlling cerebral blood flow, cerebral capillary angiogenesis, and free radical biology in collaboration with the Cardiovascular Center. The successful candidate will be expected to contribute to a team taught neurosciences course for medical students and participate in an interdisciplinary neurosciences graduate program. Ph.D. or MD/Ph.D. (or equivalent) plus additional postdoctoral experience essential.

Interested individuals should send resume and the names of three references to: **Dr. Joseph C. Besharse, Chairman, Department of Cell Biology, Neurobiology and Anatomy, Medical College of Wisconsin, 8701 Watertown Plank Rd, Milwaukee, Wisconsin 53226-0509.**

For more information visit our Website at **http://www.mcw.edu/cellbio/**

AA/EOE

EXERCISE PHYSIOLOGIST

THE DIVISION OF BIOLOGICAL SCIENCES, UNIVERSITY OF CALIFORNIA, DAVIS, invites applications and nominations for two positions in exercise physiology. These tenure-track positions may be at the **ASSISTANT PROFESSOR, ASSOCIATE PROFESSOR** or **PROFESSOR** level, as appropriate to the candidate's qualifications. These positions will be in the Exercise Biology Program, with the possibility of a joint appointment in the UC Davis School of Medicine. A Ph.D. (or equivalent) and postdoctoral experience is required. Candidates must have an outstanding record of research achievement and will be expected to develop a strong research program in exercise physiology. Particular attention will be afforded candidates who have an integrative perspective and employ mechanistic approaches to address important issues in exercise physiology, especially as related to muscle physiology/adaptation to exercise, and to candidates who would strengthen current campus initiatives on genomics, mouse biology, aging or gender-related responses to exercise. The successful candidates will be expected to teach undergraduate and graduate level courses in exercise biology and participate fully in the teaching and advising programs coordinated by the Divisions of Biological Sciences and Graduate Studies.

Applications should include: (1) curriculum vitae (with e-mail address), (2) statement of current and proposed research interests, (3) three relevant reprints, (4) statement of teaching experience/interests, (5) names, telephone numbers, and addresses (postal and e-mail) of at least three references, and (6) candidates should also arrange to have their reference letters mailed directly to the Committee Chair. All materials should be sent to: **Charles A. Fuller, Chair, Exercise Biology Search Committee, Exercise Biology Program, University of California, One Shields Avenue, Davis, CA 95616-8674**. Closing date: open until filled, but all materials must be received by **September 30, 2002** to be assured of full consideration.

The University of California, Davis, is an Affirmative Action/Equal Opportunity Employer with a strong institutional commitment to the development of a climate that supports equality of opportunity and respect for differences.

FACULTY POSITIONS
Biological NMR Spectroscopy and Mass Spectrometry
McMaster University
Departments of Chemistry and Biochemistry

The Departments of Chemistry and Biochemistry at McMaster University invite applications for two joint tenure-track **ASSISTANT PROFESSOR** positions in biological NMR spectroscopy and mass spectrometry. The successful candidates will hold a Ph.D. in chemistry or biochemistry, preferably with relevant postdoctoral experience, and will be expected to develop strong, externally funded research programs and participate fully in teaching at both the undergraduate and graduate levels. These positions are linked to existing strengths in the area of chemical biology and to a recent infrastructure expansion involving the two Departments at McMaster. This includes the construction of a new 25,000-square-foot research facility that is fully equipped for the study of biomolecule-biomolecule and small molecule-biomolecule interactions by NMR, MS, crystallography, fluorescence, and other spectroscopic techniques. Applications including curriculum vitae; research proposal; statement of teaching interests; and letters from three references should be sent by October 15, 2002, to: **Dr. Brian McCarry, Chair, Biomolecular Interactions Search Committee, c/o Department of Chemistry, McMaster University, Hamilton, ON L8S 4M1 Canada. Telephone: +1-905-525-9140, Extension 24192; FAX: +1-905-522-2509**. *McMaster University is committed to Employment Equity and encourages applications from qualified men and women, members of visible minorities, aboriginal peoples, and persons with disabilities. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

FACULTY POSITION in chemistry and biochemistry. Miami University, Oxford Campus, Department of Chemistry and Biochemistry invites applicants with a Ph.D. degree in biochemistry or related areas for a tenure-track **ASSISTANT PROFESSOR** position starting August 2003. Preference will be given to candidates whose research addresses important problems in metabolism, specifically those who will use modern biochemical approaches such as metabolic profiling to explore pathways and their regulation for secondary metabolite production in plants or microorganisms.

Applicants should have a strong commitment to developing an externally funded research program and to teaching at the undergraduate and graduate level. Qualified persons should (1) submit curriculum vitae and a detailed description of their proposed research and (2) arrange for three letters of recommendation to be sent to: **Biochemistry Search Committee, Department of Chemistry and Biochemistry, Miami University, Oxford, OH 45056**. Review of complete applications will begin Friday, November 1, 2002. The search will continue until the position is filled. More information concerning the Department and this position can be found at our **website: http://www.cas.muohio.edu/chm/**. *Because Miami University is an Equal Opportunity/Affirmative Action Employer, women and minorities are particularly encouraged to apply for this position.*

ASSISTANT PROFESSOR
Behavioral Neuroscience

In connection with a neuroscience initiative, Princeton University's Department of Psychology anticipates making an appointment at the Assistant Professor level to begin September 2003. The position is in behavioral neuroscience with expertise in animal research. Applicants should have an active program of laboratory research and be prepared to teach at both undergraduate and graduate levels. Ph.D. required. Send curriculum vitae, one-page research description, and three letters of recommendation to: **Neuroscience Search Committee, Department of Psychology, Princeton University, Princeton, NJ 08544-1010**. Deadline is October 15, 2002. *Princeton is an Equal Opportunity/Affirmative Action Employer.*

BIOORGANIC CHEMISTRY
Dartmouth College

Applications are invited for a faculty position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level starting July 2003. The Chemistry Department seeks an individual who will establish a nationally recognized research program in organic chemistry at Dartmouth and who will excel at teaching in our undergraduate and Ph.D. curriculum. The Department has under way a major initiative in the area of structural biology, and preference will be given to individuals who use organic synthesis to address problems of biological significance. Candidates will be expected to be able to teach introductory and advanced courses in organic chemistry as well as graduate courses in their area of research. Applicants should submit curriculum vitae, a description of their research plans, and a brief statement about their teaching interests. Applicants should also arrange to have three letters of recommendation sent on their behalf. All inquiries and applications will be treated confidentially. Application materials should be sent to: **Chair, Organic Chemist Search Committee, Department of Chemistry, 6128 Burke Laboratory, Dartmouth College, Hanover, NH 03755-3564**. The Committee will begin to consider completed applications on October 15, 2002. *With an even distribution of male and female students and over a quarter of the undergraduate student population members of minority groups, Dartmouth is committed to diversity and encourages applications from women and minorities. Dartmouth College is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION
Computational/Theoretical Chemistry

Montana State University Department of Chemistry and Biochemistry invites applications for a tenure-track position in computational/theoretical chemistry starting January 1, 2003, or later. The successful candidate will show outstanding promise for establishing an innovative and highly visible research program with synergistic ties to one or more research groups on campus working in rapidly advancing areas including structure/dynamics of macromolecules, electronic structure of bioinorganic or nanomaterials, and modeling of complex biological or chemical systems. A Doctoral degree in chemistry or closely related discipline and promise of excellence in teaching are required. Postdoctoral experience is desirable. Appointment at the **ASSISTANT PROFESSOR** level is anticipated but appointment at a higher level may be considered. See **website: http://www.montana.edu/level2/jobs.html** for a complete position description. Review of responses to this ad will begin on September 23, 2002, and will continue until the position is filled. Submit curriculum vitae, a statement of research and teaching interests, and have three letters of reference sent directly to: **Professor Patrik Callis, Search Committee, Department of Chemistry and Biochemistry, Montana State University, Bozeman, MT 59717**. *Americans With Disabilities Act/Equal Opportunity/Affirmative Action/Veterans Preference.*

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

Applicants are invited to apply for Assistant Professorships in inorganic, organic, and physical chemistry. Applicants should arrange to have three letters of recommendation sent independently and should provide curriculum vitae, a list of publications, and an outline of their future research plans. Applications and supporting materials should be sent to: **Chair, c/o Ms. Carol Gonzaga, Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138-2902**. The deadline date for receipt of applications and supporting materials is November 30, 2002. *Harvard University is an Affirmative Action/Equal Opportunity Employer and welcomes applications from women and minority group members.*

FACULTY POSITION
HIV/AIDS Virology

The Department of Molecular Virology and Microbiology at Baylor College of Medicine invites applications for a full-time, tenure-track/tenure faculty position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. All HIV/AIDS research interests will be considered but applicants interested in the pathogenesis of infections or vaccine development are especially sought. Applicants should have a Ph.D. and/or M.D. degree, relevant postdoctoral experience, and demonstrated research productivity. The successful candidate will be expected to maintain an independent, externally funded research program; participate in graduate training; and supervise the Center for AIDS Research (CFAR) Virology Core. This is an opportunity to join a vibrant, interactive department with strong research and training programs in the rich scientific setting of the renowned Texas Medical Center. Current research interests of an exceptional faculty focus on viral and bacterial gene expression and pathogenesis, RNA and DNA viruses of human diseases, vaccine evaluation, and microbial genomics and proteomics. The interdepartmental CFAR offers excellent opportunities for collaborative research, especially with international AIDS research programs; the Baylor Pediatric AIDS Clinical Trials Unit; and the CPCRA at the University of Texas. An NIH-funded training program for clinical research on AIDS supports postdoctoral trainees. A start-up package, modern laboratory space, and access to outstanding core facilities are available. Send curriculum vitae; a statement of current research activities; a concise summary of future plans; and arrange to have three letters of recommendation sent by October 15, 2002, to: **Dr. Janet S. Butel, Faculty Search Committee, Department of Molecular Virology and Microbiology, Mail Stop BCM385, Baylor College of Medicine, Houston, TX 77030. E-mail: mvm-facultypos1@bcm.tmc.edu**. *Baylor College of Medicine is an Affirmative Action/Equal Opportunity Employer.*

DIRECTOR
Center for Cognitive Neuroscience
Duke University

Duke University is seeking applications or nominations for the position of Director of the Center of Cognitive Neuroscience. Candidates should be prominent scholars with established research programs within the field of cognitive neuroscience who wish to lead an established and vital center; further develop the Center through the hiring of additional faculty into funded positions; and contribute to a growing universitywide commitment to the study of brain and cognition through interaction with other faculty within the Departments of Psychological and Brain Sciences and Neurobiology, the Center for Neural Engineering, and the Brain Imaging and Analysis Center. Please send curriculum vitae and names of references to: **Cognitive Neuroscience Search Committee, c/o Office of the Provost, 220 Allen Building, Duke University, Durham, NC 27708 U.S.A.** Applications will be considered until the position is filled. *Duke University is an Equal Opportunity/Affirmative Action Employer.*

California Institute of Technology: Applications are being accepted for a tenure-track position as **ASSISTANT PROFESSOR OF CHEMICAL ENGINEERING** with an initial appointment of four years, contingent upon completion of all requirements for a Ph.D. in chemical engineering or other related field. Outstanding individuals with a strong commitment to original research and teaching excellence are encouraged to apply. Curriculum vitae including a list of publications, a brief description of proposed research activities, and three letters of recommendation should be sent to: **Chair of the Faculty Search Committee, Chemical Engineering, Mail Code 210-41, California Institute of Technology, Pasadena, CA 91125**. Applications should be received by January 1, 2003. *The California Institute of Technology is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*

THE STATE UNIVERSITY OF NEW JERSEY

RUTGERS

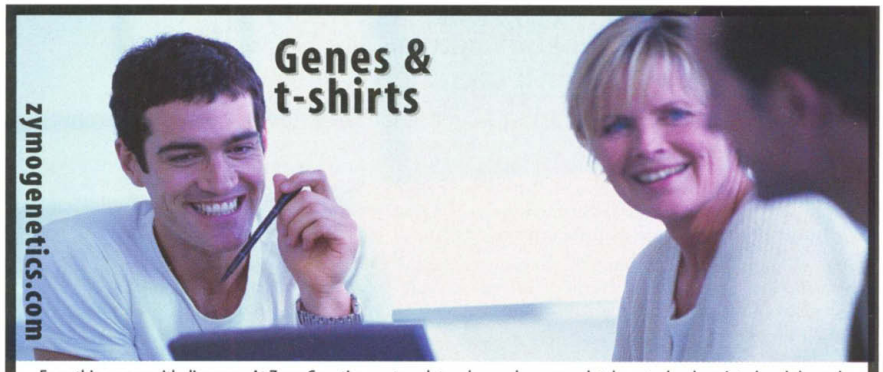
Campus at Newark

SYSTEMS NEUROSCIENTIST

Center for Molecular and Behavioral Neuroscience

One state-funded, tenure-track faculty position is available for appointment at the assistant professor level. Neuroscientists stimulated by the opportunities offered by the integrative focus and collaborative environment of the Center in the areas of molecular, systems and behavioral research are encouraged to apply. The Center is in close proximity to UMDNJ Medical School and shares a joint graduate program with them in Integrative Neuroscience. The Newark campus is near New York City and attractive New Jersey countryside living. Interested neuroscientists should send their CV, names of three references and a brief letter of research goals and philosophy to: Drs. Paula Tallal and Ian Creese, Co-Directors, Center for Molecular & Behavioral Neuroscience, **Rutgers, The State University of New Jersey, 197 University Avenue, Newark, New Jersey 07102**

Rutgers is an EOE/AA Employer



Everything goes with discovery. At ZymoGenetics, we translate advanced genome database technology into breakthrough treatments for a range of human illnesses. Our 20-year history has given us a robust pipeline of product candidates advancing towards clinical development. With over 225 issued U.S. patents and over 350 pending U.S. patent applications, ZymoGenetics is emerging as a leader in the biopharmaceutical industry. It's creative work on the edge of computer and biological science. As for what you wear –that's entirely up to you.

Scientist/Sr. Scientist - In Vivo Biology We are seeking a biologist/pharmacologist experienced in small animal pre-clinical efficacy models of inflammation. Duties will primarily be focused on the testing of novel protein therapeutics in animal models of disease and the phenotypic analysis of knockout and transgenic animals. The successful candidate will have a strong background in inflammatory mechanisms, innate immunity, mucosal immunity, and/or inflammation- associated vascular disease. The position requires a Ph.D. in pharmacology, physiology, pathology, or other life science and a minimum of 5 years post graduate experience in an inflammation-related area. Hands-on experience in experimental animal modeling including experimental design, dosing, surgery and necropsies is required. Demonstrated ability to design and carry out animal models as well as interpret physiological results is absolutely required. Industry experience is a plus but not required.

Located in the historic City Light building on Seattle's Lake Union, ZymoGenetics offers employment packages that include state-of-the-science challenges, flexible schedules, and a generous benefits package. For confidential consideration, visit the career page of our website to apply online at: www.zymogenetics.com or email: zymo@rpc.webhire.com. Please reference Source Code zymo-0029 in the subject line. If including a cover letter, please place/paste after the resume. Or mail: ZymoGenetics, Inc., Unit 247, Source Code zymo-0029, P. O. Box 3175, Burlington, MA 01803. We are an equal opportunity employer and encourage applications from women and minorities.

GENE POWER

ZYMOGENETICS

COLUMBIA UNIVERSITY
COLLEGE OF PHYSICIANS AND SURGEONS
CHAIR, DEPARTMENT OF PHYSIOLOGY

Applications are invited for the position of Chair of the Department of Physiology at the College of Physicians and Surgeons of Columbia University in the City of New York. We seek candidates with outstanding accomplishments as scientific leaders who will be able to build programs in physiological research from molecules to systems. Columbia University offers outstanding opportunities to build interdisciplinary academic programs in physiology that bridge medicine and preclinical sciences including but not limited to biology, computational biology, chemistry, and bioengineering. The Department of Physiology is one of six basic science departments situated on the Health Sciences campus of Columbia University and is a member of the Coordinated Doctoral Program in the Basic Sciences at the University.

Interested candidates should submit curriculum vitae, as well as a letter of interest describing the candidate's vision of physiology in the health sciences, to Dr. R.S. Kass, Chair, Physiology Chair Search Committee, Department of Pharmacology, College of Physicians and Surgeons of Columbia University, 630, West 168th Street, New York, NY 10032.

Columbia University is an equal opportunity/affirmative action employer.

Surface Nanotechnologies

SuNyx

SuNyx is a nanotechnology-based company focused on R&D of proprietary functional surfaces and devices with international cooperation partners. People are SuNyx' most valuable assets. We are seeking enthusiastic creative individuals to strengthen our multi-disciplinary team. An immediate opening is for an

Anwendungsspezialist Biochips
Application Specialist Microarrays

You will evaluate and develop new applications of our proprietary technology for microarrays and direct electronic manipulation of liquids in nanofluidic devices. You will be part of our marketing and product management and closely cooperate with our R&D team. The position requires a PhD in biochemistry, molecular biology or related discipline with 2+ years experience in methodologies relevant to microarrays/ microfluidics.

SuNyx offers a stimulating scientific environment in addition to competitive salaries and benefits. If you are ready to discover a new challenge send your resume to:

SuNyx Surface Nanotechnology GmbH, Stolberger Str. 370, 50933 Köln, Germany, Contact: Dr. Kerstin Vorberg.
Phone: +49 221 485 2457, Fax: +49 221 485 2479, mail@sunyx.de

www.sunyx.de

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (HKUST)

BIOTECHNOLOGY RESEARCH INSTITUTE

The Biotechnology Research Institute (BRI) at the HKUST was founded in 1990 with a mission to assist Hong Kong in creating a viable and productive biotechnology industry. Today, BRI possesses a solid world-class research infrastructure to support the advancement of the biotechnology industry both within Hong Kong as well as globally. Further information about the Institute can be found at its homepage at **http://www.ust.hk/~bri/index.shtml**.

Applications are invited for the following appointments of the BRI, tenable immediately with the possibility of renewal. Details of the following appointments (with specific duties and requirements) can also be found at the web site at **http://www.ab.ust.hk/po/vac.html**.

(1) Business Development Manager (HK$46,355 per month or up)

The appointee will be responsible in the preparation of all analytical assessments necessary to support strategic development plans, market forecasts, and commercial assessments of strategic alliance, acquisition, and in-licensing opportunities. Specific duties will include performing analyses, as well as developing, compiling, managing, and updating various databases and analytical and tracking models.

Applicants should have an MBA degree, preferably with a BS or MS degree in life sciences; 3 to 5 years of relevant experience with a pharmaceutical or biotechnology company, management consultancy, investment bank or market research consultancy; competence in the collection, analysis and interpretation of market data, with solid knowledge of pharmaceutical/biotechnology industry secondary data sources; and experience of implementation of business analysis programs through the use of financial and decision analysis models, strategic analysis frameworks and financial and scientific due diligence processes.

(2) Manager, R&D Projects, BRI (HK$33,765 per month or up)

The appointee will provide project management support for the development and pre-clinical evaluation of novel therapeutic compounds; develop and maintain detailed project timelines and resource plans to identify deliverables, interdependencies, and target due dates.

Applicants should have a PhD degree in a life science, preferably with also an MBA degree; knowledge of drug discovery and pre-clinical R&D processes; 2 to 3 years of project management experience in managing cross-functional teams and leading high visibility projects of diverse scope; and the ability to develop comprehensive project plans with tasks, milestones, and timelines.

(3) Bioinformatics Scientist (HK$33,765 per month or up)

The appointee will oversee the activities of the bioinformatics buildup and will closely integrate bioinformatic analysis and discovery with BRI's ongoing research programs to fully integrate existing and future database platforms.

Applicants should have a PhD degree in bioinformatics, computational biology, or a related field; 3 to 5 years of relevant experience of working with genomic/protein databases, sequence based discovery research, or methods/tools development; extensive knowledge of computational and database tools; expert programming skills (Perl, C/C++, Java, Python, SQL) with strong background in UNIX and NT OS; and knowledge in protein function prediction, gene discovery (EST, cluster analyses, sequence homology, and algorithm based gene boundary prediction and validation) and sequence analysis.

(4) Research Projects Coordinator (HK$33,765 per month or up)

The appointee will work with senior management to provide project management support for the development of multi-disciplinary research projects. He/She will also prepare scientific reports, assist in the preparation of scientific publications and participate in future research project development of the Institute.

Applicants should have a PhD degree in molecular neuroscience or equivalent; 2 to 3 years of project management experience and ability to work effectively with multi-disciplinary teams.

Starting salary will be commensurate with qualifications and experience. A gratuity will be payable upon successful completion of contract. Fringe benefits include annual leave, medical and dental benefits.

Application Procedure

Interested parties please send detailed CV with the names, addresses and emails of two referees, a summary of research experience and interests to: Ms Anna So, Executive Officer, Biotechnology Research Institute, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong. Review of applications will continue until the post is filled. We thank applicants for their interest and would like to advise that candidates who are not contacted within 3 months after applying may consider their application unsuccessful.

(Information provided by applicants will be used for recruitment and other employment-related purposes.)

FOOD STANDARDS AGENCY

Call for Tender: Research on the Toxicology of Dioxins

Expert reviews have identified gaps in the knowledge related to the risk assessment of dioxins particularly with respect to effects on the developing fetus. Proposals are sought that address this issue and specifically maternal and fetal body burdens arising from different dosing protocols in relation to the dose-response relationship for adverse developmental effects in animal models. Since the goal is to relate these data to possible human fetal exposure from the maternal diet the inclusion of modelling to address this point is also welcomed.

It is recognised that such a study is likely to require collaboration between contractors with biological and analytical expertise and such proposals are welcomed.

The closing date for receipt of completed applications is 1 November 2002.

For further details and information on how to apply please contact: Caroline Tahourdin (caroline.tahourdin@foodstandards.gsi.gov.uk) ++44 (0)20 7276 8520 or David Gott ++44 (0)20 7276 8527 (david.gott@foodstandards.gsi.gov.uk)

The Food Standards Agency - putting the consumer first.

Virginia Commonwealth University
Massey Cancer Center
and
Department of Microbiology and Immunology
Assistant Professor
F6129

The Massey Cancer Center, an NCI-designated cancer center at Virginia Commonwealth University, and the Department of Microbiology and Immunology are seeking a Ph.D. level immunologist with an interest in cancer immunology, with an emphasis on tumor antigen presentation, vaccine development, and/or adoptive immunotherapy. This Assistant Professor position will have an academic appointment (non-tenure) in the Department of Microbiology and Immunology.

Expectations for this position are to participate in design and immunological monitoring of immunotherapeutic trials for patients with cancer. This would include cellular responses and cytokine assays as well as other testing as appropriate. In addition, this scientist will have the opportunity to conduct and participate in laboratory research exploring fundamental issues in cancer immunology with potential for translation to clinical trials. Expectations include securing funding with another investigator or individually and to publish and present findings.

Qualifications: Ph.D. in immunology or related field; significant experience in modern immunology or a related field; significant experience/background in cellular and/or molecular cancer immunology; experience in translational research is desirable; preference will be given to candidates who complement existing research strengths.

Candidates must submit cover letter, curriculum vitae, transcripts, salary history and three (3) professional references. Position opened until filled. Mail documents to: **Phyllis Winter, Massey Cancer Center, 401 College Street, PO Box 980037, Richmond, VA 23298-0037.**

Virginia Commonwealth University is an Equal Opportunity/Affirmative Action Employer. Women, minorities, and persons with disabilities are encouraged to apply.

RENOVIS is a biopharmaceutical company focusing on neurological diseases and disorders, including CNS injury, neuropathic pain, and obesity/diabetes. We use a combination of novel genomics and cell-based assay technologies coupled with expertise in neurobiology to discover validated targets and develop small molecule and protein therapeutics.

HEAD OF PHARMACOLOGY

We seek a hands-on *in vivo* pharmacologist to focus on the evaluation of new drug candidates in neurological and inflammatory disease models. Use your strong management skills as you lead a team of laboratory technicians, research associates and PhD-level scientists. The ideal candidate should have a PhD/MD in a relevant biological discipline and 5–10 years industrial experience in preclinical pharmacology studies supporting discovery/development programs. Demonstrated expertise in the design and statistical analysis of preclinical testing of compounds in animal disease models and extensive experience with surgical techniques and drug administration methods are needed. Relevant experience in disease areas (CNS injury, pain, neuroinflammation), knowledge of resource and budget planning, and strong management skills are key. Experience managing outsourced studies, including toxicology studies, is desirable. Excellent interpersonal skills are required. Job Code HP-SCI

SCIENTIST
CNS Injury and Regeneration

Working with a team of scientists and research associates, you'll provide scientific and technical leadership for our Injury and Regeneration Program. You'll evaluate small molecules and biotherapeutics using *in vitro* and *in vivo* models of neuronal regeneration and neuroinflammation, with a focus on spinal cord injury. Requires a PhD in Biological Sciences and 2–5 years postdoctoral experience in a neuroscience-related field with a proven track record in traumatic injury and regeneration models of the nervous system. Experience with preclinical *in vivo* studies and a background in neuroinflammation are desirable. Biotech or pharmaceutical industry experience a plus. Experience in supervising technical personnel and managing team members in a project-driven environment is a must. Job Code SIR-SCI

For more information on these positions and others, please visit our website. In addition to a competitive salary and excellent benefits, we offer equity participation. Please email your resume, cover letter and salary history, indicating Job Code, to recruiting@renovis.com, or mail to Renovis, Inc., Attn: Human Resources, 270 Littlefield Avenue, South San Francisco, CA 94080. EOE

www.renovis.com

RENOVIS

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Northeastern
UNIVERSITY

George D. Behrakis Endowed Chair In Pharmaceutical Biotechnology

Bouvé College of Health Sciences

George D. Behrakis, founder of Muro Pharmaceuticals and a graduate of the School of Pharmacy, generously created the **Behrakis Chair** as a leadership research position at Northeastern University. The position will be housed in the Bouvé College of Health Sciences and the School of Pharmacy. The University has dedicated significant resources to support the Chair and as an additional step in Northeastern University's expanding program in biotechnology.

The successful candidate will be an excellent scientist with significant research stature, have an excellent track record of sustained research funding, and the proven ability necessary to be a leader in developing and interfacing biotechnology. Northeastern University is looking for an individual with excellent communication skills who is committed to building excellence in an applied aspect of biotechnology. An individual who has an interdisciplinary orientation and is synergistic with the University's strengths in technology and engineering as well as the College of Health Sciences' significant capabilities in neuropharmacology, drug design and delivery, proteomics and metabolomics.

The chair will play a key role in the development of biotechnology and The Biotechnology Initiative at Northeastern University. The Biotechnology Initiative involves targeting faculty hires at all levels, new interdisciplinary research and educational programs, the development of course resource laboratories, and a close liaison with local industry, which can include new enterprise start-up incubation. The Behrakis Chair will be awarded the rank of full professor. The Chair may also play an important leadership role in the Northeastern's Sloan Foundation funded programs in Biotechnology and Bioinformatics. Significant opportunities exist for collaboration with Northeastern's expanding programs and facilities in bioengineering, biology, medicinal chemistry, nanotechnology, neuroscience, and with the Barnett Institute of Chemical and Biological Analysis. Several strategic collaborations with neighboring institutions, including the local medical schools, have also been established.

The Chair will also be able to take advantage of Northeastern's established technology transfer program and to develop collaborations with Northeastern's industrial partners in the Boston region, the second largest and fastest growing biotechnology sector in the country.

The preferred areas of interest are flexible and related to broad topics in health sciences and molecular pharmacology, for example: neuropharmacology, drug design, drug delivery, medicinal chemistry and pharmacogenomics. The ideal candidate should be a top scientist with significant interest in utilizing and interacting with the unique and broad array of technologies available at Northeastern, while at the same time demonstrating a commitment to students and education.

Please send letter of application and representative publications to: Professor Vladimir Torchilin, Chair, George D. Behrakis Endowed Chair Search Committee, Department of Pharmaceutical Sciences, School of Pharmacy, Bouvé College of Health Sciences, Northeastern University, 360 Huntington Avenue, Boston, MA 02115.

Review of applications for this position will commence on October 15, 2002 and will continue until this position is filled.

Northeastern University is an Equal Opportunity, Affirmative Action Educational Institution and Employer, Title IX University

http://www.neu.edu

The University of Michigan
Ann Arbor

Director, Institute of Gerontology

The University of Michigan invites applications for the Director of the Institute of Gerontology (IoG), which is a free-standing, multidisciplinary research unit reporting to the Vice President for Research and closely affiliated with the Medical School, the College of Engineering, the School of Public Health, the School of Nursing, the Institute for Social Research, and the College of Literature, Science, and the Arts. Established in 1965, the IoG has earned an international reputation for excellence across the full spectrum of gerontological research and training. The 36 IoG faculty (who hold joint appointments in multiple departments in 5 schools) have a record of consistent funding from state, federal, and foundation sources (over $6M in direct costs for the current fiscal year among the 12 investigators with labs and offices within the Institute's confines) including the Nathan Shock Center for Excellence in the Biology of Aging and an NIH Training Grant.

Candidates will hold the M.D. and/or Ph.D. degree(s) with a proven record of scientific accomplishment relevant to the field of gerontology as reflected by an active, independent, internationally recognized research program, a strong record of extramural support, and respect of peers. Candidates with prior administrative experience and a documented commitment to effective leadership are strongly encouraged to apply. The Director position is a 5-year renewable term appointment. It is anticipated that the new Director will also hold a tenured professorial appointment in a department of a school or college relevant to his/her academic and professional discipline. To apply, please send CV, statement of research interest, and the names of three references to:

Ms. Jane Ritter
IoG Director Search Committee
Office of the Vice President for Research
University of Michigan
4080 Fleming Building
503 Thompson Street
Ann Arbor, MI 48109-1340

(Individuals who wish to keep their candidacy confidential should indicate so in their cover letter.)

A non-discriminatory Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIP
Signal Transduction and Inflammation

A postdoctoral position is available at National Jewish Medical and Research Center to study signal transduction pathways for regulating cytosolic phospholipase A2 and production of mediators of inflammation. Molecular and cellular approaches will be used to investigate the role of calcium, phosphorylation and binding proteins in the translocation of the phospholipase to Golgi/perinuclear membranes.

Send CV and three references to:
Dr. Christina C. Leslie
The Program in Cell Biology
National Jewish Medical
and Research Center
1400 Jackson St., D406
Denver, CO 80206
e-mail: lesliec@njc.org

NATIONAL JEWISH
Medical and Research Center

AA/EOE

The University of Michigan
Ann Arbor

Director, Center for Human Growth and Development

The University of Michigan invites applications for the position of Director of the Center for Human Growth and Development (CHGD). CHGD is a multidisciplinary research unit reporting to the Vice President for Research, with joint faculty appointment ties to the Medical School, the School of Public Health, the College of Literature, Science, and the Arts, the School of Dentistry, the School of Social Work, the Division of Kinesiology, the Mental Health Research Institute, and the Institute for Social Research. Established in 1964, the CHGD has earned an international reputation for excellence in research and training. During fiscal years 2000-2001, CHGD faculty served as PI or co-PI of 79 sponsored projects totaling $57 million. Receipt of new awards in the last 4 years has doubled over the previous period.

The 25 CHGD faculty (a mix of biomedical and behavioral/social scientists) pursue research interests in four programmatic areas: children and poverty (processes by which poverty affects children's development), development and mental health (the interplay between biological, psychological, and social factors in development of mental health), culture and development (processes families and schools employ to prepare children for participation in society), and brain/behavioral relationships in the developing child (how early biologic and environmental risks affect the developing brain).

Candidates will hold the M.D. and/or Ph.D. degree(s) with a proven record of scientific accomplishment in the area of behavioral/social or biomedical science as applied to children's physical, cognitive, and socioemotional development. Candidates should have evidence of an active, independent, and internationally recognized research program, a strong record of extramural support, and the respect of peers. A commitment to, and experience in, interdisciplinary research is essential. Candidates with prior administrative experience and a documented commitment to effective leadership are strongly encouraged to apply.

The Director position is a 5-year renewable term appointment. It is anticipated that the new Director will also hold a tenured professorial appointment in a department of a school or college relevant to his/her academic and professional discipline. To apply, please send CV, statement of research interest, and the names of three references to: **Ms. Jane Ritter, CHGD Search Committee, Office of the Vice President for Research, University of Michigan, 4080 Fleming Building, 503 Thompson Street, Ann Arbor, MI 48109-1340**. (Individuals who wish to keep their candidacy confidential should indicate so in their cover letter.)

A non-discriminatory Affirmative Action Employer.

University of California
San Diego

Faculty Position – Conservation Biology
The University of California, San Diego
Section of Ecology, Behavior and Evolution
Division of Biological Sciences

The Section of Ecology, Behavior and Evolution in the Division of Biological Sciences at UCSD invites applications for a faculty position in conservation biology. A junior appointment is anticipated although rank is open and level will be commensurate with qualifications and experience with salary based on University of California pay scale. Applications from women are especially encouraged. Applicants should have Ph.D.'s and outstanding records of research achievement for their stage of career. Appointees are expected to develop strong, extramurally supported, independent research programs and participate fully in both undergraduate and graduate teaching. Applications will be reviewed upon receipt **beginning October 1, 2002** and accepted until the position is filled. Send curriculum vitae, publication list, synopsis of professional goals, research and teaching interests, and three letters of reference (mailed directly) to:

EBE Search Committee
c/o Sandra Brierley, Academic Personnel
Mail Code 0346-B
Division of Biological Sciences
9500 Gilman Drive
La Jolla, CA 92093-0346

UCSD is an Equal Opportunity-Affirmative Action Employer with a strong institutional commitment to the achievement of diversity among its faculty and staff.

University of Michigan
Medical School

UNIVERSITY OF MICHIGAN
BIOLOGICAL SCIENCES SCHOLARS PROGRAM
For Junior, Tenure-Track Faculty

The University of Michigan Medical School announces recruitment for the Biological Sciences Scholars Program (BSSP) to enhance investigational strength in the life sciences at the University of Michigan.

Now entering its sixth year, this Program has led to the recruitment of outstanding young scientists in the areas of genetics, microbiology, virology, structural biology, pharmacology, biochemistry, molecular pharmacology, stem cell biology, and the neurosciences. The Program seeks individuals with PhD, MD, or MD/PhD degrees, at least two years of postdoctoral research experience, and evidence of superlative scientific accomplishment and scholarly promise. Successful candidates will be expected to establish a vigorous, externally-funded research program, and to become leaders in departmental and program activities, including teaching at the medical, graduate, and/or undergraduate levels. Primary college and department affiliation and rank will be determined by the applicant's qualifications and by relevance of the applicant's research program to departmental initiatives and focus. Preference will be given to appointments at the Assistant Professor level, though outstanding applicants at a more advanced career stage will also be seriously considered.

Applicants should send their current curriculum vitae (including bibliography), three letters of support, and a two to four page summary of their current research program and future research plans to the address below. Applications will be considered on a rolling basis, although candidates are strongly encouraged to submit their applications by October 31, 2002.

John B. Lowe, MD, Chair, BSSP Search Committee
Warner-Lambert/Parke-Davis Endowed Professor in Medicine
University of Michigan Medical School
Dean's Office / 4107S Medical Science I / 1301 Catherine St.
Ann Arbor, MI 48109-0624

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

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Department of Health and Human Services
National Institutes of Health
National Heart, Lung, and Blood Institute

With nation-wide responsibility for improving the health and well being of all Americans, the Department of Health and Human Services oversees the biomedical research programs of the National Institutes of Health and those of NIH's research Institutes.

The National Heart, Lung, and Blood Institute, a major research component of the National Institutes of Health (NIH) and the Department of Health and Human Services, is recruiting for two postdoctoral research fellows in the Laboratory of Biochemistry. Candidates must have a recent Ph.D. degree (1999 or later) with a strong background in chemistry. US citizenship is required. Research is focused on various aspects of selenium biochemistry with emphasis on biosynthesis and function of selenium-dependent enzymes. Current studies deal with the mechanism of recruitment of inorganic and organic forms of selenium via selenium transferases or delivery proteins. Experience in isolation and characterization of oxygen-labile enzymes is desirable.

Salary is commensurate with research experience and accomplishments. Health benefits available. In addition, other benefits may be available. Applicants should send a CV, a brief statement of research interests, and the name of three references to:

Merry Peters
NIH/NHLBI/LB
Building 50, Room 2132, MSC 8012
Bethesda, MD 20892-8012
Fax: 301-496-0599
email: lbnhlbi@nih.gov

HHS and NIH are Equal Opportunity Employers

University of California
San Diego

Faculty Position
The University of California at San Diego
Section of Cell and Developmental Biology
Division of Biological Sciences

The Section of Cell and Developmental Biology in the Division of Biological Sciences at UCSD invites applications for a new faculty position. The appointment will be at the Assistant/Associate/ or full Professor level. Candidates pursuing innovative research in all areas of modern cell biology are encouraged to apply. Research areas include, but are not restricted to: intracellular compartmentation, membrane/cytoskeleton dynamics and locomotion, cell cycle, growth regulation, and morphogenesis. The successful candidate is expected to have a broad interest in cell biology and complement existing strengths in the Section of Cell and Developmental Biology and within the Division of Biological Sciences. The primary criteria for selection will be research excellence and potential. All candidates must have a Ph.D., M.D., or an equivalent degree. The successful candidate is expected to participate in the undergraduate and graduate teaching curriculum. The level of appointment will be commensurate with qualifications and experience with salary based on University of California pay scale.

Complete applications **received by October 31, 2002** will be assured of consideration. Applicants should submit a curriculum vitae, a complete list of publications, a short statement of research interests and scientific goals, and three letters of recommendation (forwarded separately) to:

Cell Biology Search Committee
Section of Cell and Developmental Biology
Division of Biological Sciences
Attn: Sandra Brierley – Mail Code 0346-A
University of California, San Diego
9500 Gilman Drive
La Jolla, CA 92093-0346

UCSD is an Equal Opportunity-Affirmative Action Employer with a strong institutional commitment to the achievement of diversity among its faculty and staff.

Career in Biotechnology
(Hong Kong based)

We are a listed leading life sciences group engaged in research and development, commercialization, marketing and sale of biotechnology products including areas in eco-agriculture, bioremediation, pharmaceuticals, nutraceuticals and dermatologicals. Talented and motivated scientists are now invited to join our growing team:

1. Junior/Senior Scientists, Commercial Fields

- Responsible for the performance of top quality applied research on in-house or out-sourced projects relating to products under development including drugs. S/he will have to oversee the performance and completion of the projects involved, including formulation of product specification and assessment of product quality;
- Scientists with Master's/M.D/Ph.D degree in any of the following areas are particularly encouraged to apply: *microbiology, agriculture (animal/plant), bioremediation, environmental engineering, biomedical, physiology, pharmacology, oncology, pharmacy and clinical trials*;
- Preference will be given to those with commercial experience in leading biotech/genomics/life sciences corporations.

2. Production Scientist, Microbiology/Yeast Biotechnology

- Assist the senior management in developing processes for large-scale production, provide solution for improving the current processes, act as an interface between the R & D Division and the production Division;
- Ph.D in *microbiology* specialized in *yeast physiology*. A minimum of 3 years of research/industry experience in the field of yeast biotechnology is required. Previous experience in the area of industrial exploitation of yeasts would be beneficial. Preference will be given to those from leading beer or bakery/pastry manufacturing plants.

All positions require excellent English and Chinese (include Putonghua) and occasional travel. If you are interested to work in a stimulating scientific and team-oriented environment, please e-mail to **hkopportunity@yahoo.com.hk** or post to the HR Manager at GPO Box 4333, Hong Kong with full publication list and salary requirement.

The University of Texas at Austin

Microscopy and Imaging Staff Position

The Institute for Cellular and Molecular Biology

Position available for Manager of the microscopy and imaging core facility in the Institute for Cellular and Molecular Biology at the University of Texas at Austin. The successful candidate will assist in all aspects of optical microscopy, experimental design, and interpretation. Responsibilities will include managing the facility, operating and maintaining confocal, fluorescence, and multi-photon microscopes and associated computer systems, as well as providing instruction and assistance to researchers using the facility. The candidate will also be expected to assist with a fluorescence activated cell sorter. Experience with microscopy and fluorescent labeling of biological samples, competence with multiple computer platforms, and general technical ability are desirable. A PhD in biological or physical science is required. Please send curriculum vitae / résumé and cover letter to:

Dr. Henry R. Bose, Jr.
Associate Director
Institute for Cellular and Molecular Biology
The University of Texas at Austin
Austin TX 78712

Homepage • http://www.icmb.utexas.edu

The University of Texas at Austin is an Equal Opportunity Employer
Qualified women and minorities are encouraged to apply

Research Associate in Molecular and Cell Biology

The Laboratory for Drug Discovery in Neurodegeneration (LDDN) invites applications for a position in its Leads Discovery Department. The LDDN is one of five core groups of the Harvard Center for Neurodegeneration and Repair (**http://hcnr.med.harvard.edu/**), an organization that is dedicated to the rapid development of new therapeutics for the treatment of neurodegenerative diseases. Combining new drug discovery technologies in assay development, high-throughput screening, and medicinal chemistry, this innovative academic laboratory actively collaborates with investigators within the research community of Harvard Medical School and its affiliated hospitals and functions as a unique model of drug discovery.

The successful candidate will hold a B.S. or M.S. degree in biology or biochemistry and have at least four of experience in cloning and expression in *E.coli*, baculovirus and mammalian cell systems, transgenic cell line development, reporter gene construction, protein purification, and cell culture techniques. The candidate will be an integral member of the Leads Discovery Group and will be expected to record and analyze data, prepare reports of completed projects for publication in technical journals and presentations at internal meetings. Experience in a drug discovery research environment is a plus.

For consideration, please send detailed cover letter, CV, and names of three references to: **Dr. Li-An Yeh, Director of Leads Discovery, Laboratory for Drug Discovery in Neurodegeneration, Brigham and Women's Hospital, 65 Landsdowne Street, Fourth Floor, Cambridge, MA 02139 or email to lyeh@rics.bwh.harvard.edu**.

Science

ON-LINE EDITOR

SCIENCE Magazine is looking for a versatile web editor/writer/reporter to oversee a new web site devoted to the science and medical policy issues surrounding aging. Successful candidate must be enthusiastic about policy issues, self-motivated, well organized, and independent. Moreover, he or she must be a polished writer who can produce breaking news and features under tight deadlines, display a talent for explaining complex science clearly, and require little "top-editing" plus possess the ability to edit the work of experts to improve the copy. Also expected are at least a Master's degree, preferably including a strong science component, and at least 5 years experience in scientific journalism. A solid understanding of basic concepts in molecular medicine would be a plus as would experience in policy writing and strong communication skills. Previous Internet/Web experience required in order to post information to the Web site; computer skills (Microsoft Office as well as experience with graphics programs); knowledge of HTML coding would be a plus. This is a part-time regular position anticipated to extend for a one-year period.

Please send resume along with salary requirements and no more than three clips to: **Dawn Graf, AAAS, 1200 New York Avenue, NW, #101, Washington, DC 20005**. You may also e-mail your resume to **hrtemp@aaas.org** and you may apply by **Fax at 202-682-1630**. Visit us at **www.aaas.org**.

SCIENCE is published by the American Association for the Advancement of Science, an Equal Opportunity Employer.

Department Head
Department of Bioscience and Biotechnology
Drexel University
Philadelphia, PA

The Department of Bioscience and Biotechnology, Drexel University in Philadelphia, is seeking an outstanding Department Head committed to a balance between research and undergraduate and graduate education.

The successful candidate for this senior position (professor with tenure) will have a proven track record in extramurally funded research in an area of modern biology as well as experience in managing personnel and budgets. Demonstrated capability for active collaborations on an interdepartmental level and with biologically/health-related industry are major advantages, as is experience in faculty governance.

With the recent merger with MCP Hahnemann Medical School, Drexel University is moving toward the first tier of research universities nationwide. The successful candidate is expected to energetically advance Bioscience as one of the core life sciences departments in this rapidly changing environment.

Applicants are requested to submit a full CV, statements of research and educational interests, and the contact information for five or more references to the Dean's Office, College of Arts and Sciences, Attention: Bioscience Head Search Committee, Drexel University, 4020 MacAlister Hall, 33rd & Chestnut Streets, Philadelphia, PA 19104. Tel: 215-895-2620.

The review of the applications will begin October 1, 2002 and continue until the position is filled. Details on the department can be found at www.bioscience.drexel.edu

Drexel University is an equal opportunity employer.

Head, Department of Biology

Texas A&M University
College Station, Texas

A national search is underway to identify outstanding candidates for Head of Biology at Texas A&M University, the fourth largest university in the nation with an enrollment of over 44,000 students and recently rated in the top 15 of public universities in the U.S. News and World Report ranking of doctoral universities. Our thematically diverse Department is at the research and teaching core of the fundamental life sciences at Texas A&M. The Department seeks an individual with a dynamic and internationally recognized research program, a sincere commitment to undergraduate and graduate education, and proven leadership skills.

The Department has 1,300 undergraduate majors, 90 graduate students, 33 full-time faculty members, 6 joint appointees and 7 lecturers. The University is committed to increasing the number of full-time tenured and tenure-track faculty to 40 by 2005. Departmental facilities support a wide range of molecular biological, imaging and computational technologies. Complementary expertise and specialized facilities are available through collegial interactions across campus. Further information about the Department, its faculty and its facilities can be found at our website: **www.bio.tamu.edu**.

Applicants should send a curriculum vitae and a statement of research accomplishments, teaching perspective and administrative philosophy to:

Chair, Head Search Advisory Committee, Department of Biology, 3258 TAMU, Texas A&M University, College Station, TX 77843-3258. The application deadline is October 1, 2002, or until the position is filled.

Texas A&M University is an Equal Opportunity Employer and encourages underrepresented minorities and women to apply.

University of New Hampshire

Faculty Position in
MICROBIOLOGY

The Microbiology Department at the University of New Hampshire (UNH) invites applications for an Assistant Professor tenure-track position. This position is associated with an NIH Centers of Biomedical Research Excellence (COBRE) award – Immune Mechanisms Controlling Inflammation and Cancer – jointly awarded to Dartmouth Medical School and UNH. This multi-investigator core grant provides opportunities for the successful candidate to develop collaborative associations, while developing a competitively funded research program.

Candidates must have a doctorate degree in Microbiology or related field. Postdoctoral experience is expected. The Microbiology Department offers B.S., M.S., and Ph.D. degrees and the successful candidate will be expected to participate in both undergraduate and graduate teaching and to mentor graduate students. We are particularly interested in candidates with a strong background in either immunology or microbial genetics.

The position starts January 2, 2003; evaluation of applications will begin October 31, 2002. Applicants should send curriculum vitae, statements of research interests and teaching philosophy, and the names of three references to: **Dr. Frank G. Rodgers, Department of Microbiology, Rudman Hall, 46 College Road, UNH, Durham, NH 03824-2617.**

UNH is committed to excellence through diversity among its faculty and staff and strongly encourages women and minorities to apply.

Biotechnology

DIVERSA

Diversa Corporation is a leader in the discovery and development of novel enzymes and other biologically active compounds from diverse environmental sources for use in the agricultural, chemical, industrial and pharmaceutical applications. We are currently looking for the following position:

Bioinformatics Software Applications Engineer

Seeking candidate with five years of experience in bioinformatics applications development and two years of management experience including working in a collaborative pharmaceutical and/or biotech environment. Solid background in software application development processes and team development. Must have an understanding of current and new bioinformatics technologies and related concepts, including gene finding, protein classification, genome annotation, gene expression profiling and proteomics analysis. Knowledge of pharmaceutical R&D processes, particularly the application of computer technology to optimize these processes. Experience with database administration and application programming, utilizing current industry development tools (perl, html, xml, cgi, c++, java, vbscript, database connectivity). Requisition number: **7BI007**

Diversa offers competitive salary, comprehensive benefits, stock options, and a dynamic work environment. To learn more about our exciting technology, visit our website at **www.diversa.com**. Send resumes to **smackey@diversa.com** or **fax to 858-526-5036.**

Diversa Corporation
4955 Directors Place, San Diego, CA 92121

University of Michigan Medical School

DEPARTMENT OF NEUROLOGY CHAIR

The University of Michigan Medical School is seeking an academic leader to direct the teaching, research and patient care programs of its Department of Neurology. Qualifications include: an M.D. degree and board certification in Neurology, national stature as a physician-scientist, demonstrated clinical excellence, commitment to medical and graduate medical education, and significant experience in a leadership role in an academic medical center.

Please respond to: **Dr. N. Reed Dunnick, c/o Office of the Dean, Attn: Stephanie Campbell, University of Michigan Medical School, M4101 Medical Sciences Building I, Ann Arbor, Michigan 48109-0624.**

The University is an Equal Opportunity/ Affirmative Action Employer.

DIRECTOR, VETERINARY SERVICES
Florida Atlantic University

Florida Atlantic University (FAU) invites applications for the position of Director, Veterinary Services, for the FAU animal program. The Director position is a full-time academic administrator/faculty appointment with the possibility of teaching and/or research responsibilities in the College of Science. Responsibilities will include oversight of veterinary care; husbandry; space management; business operation; and compliance with all federal, state and local regulations. The Director will report to the Vice President for Research and advise him on matters relating to laboratory animal research, the development of new animal facilities, and all related matters. This position will direct and supervise all support staff activities for the institutional vivarium. An important duty of this position will be to achieve and maintain AAALAC accreditation. Minimum qualifications include a Doctorate of Veterinary Medicine from an AVMA-accredited institution and a minimum of three to five years of professional experience and/or training in laboratory animal medicine. Board certification is highly desirable. The candidate should be licensed to practice in the state of Florida or a state with a reciprocal agreement with the state of Florida. To apply, send a letter of interest referencing Position Number 310850; a detailed résumé; and the names and telephone numbers of at least three professional references to: **FAU, Employment Manager, 777 Glades Road, P.O. Box 3091, Boca Raton, FL 33431-0991. FAX: 561-297-2404**. Please copy **Dr. Goldberger** at **e-mail: ggoldber@fau.edu**. Applicant screening will begin immediately and will continue until the position is filled. *Please notify us in advance if a reasonable accommodation for a disability is needed to apply. Telephone: 561-297-3058; TDD 561-297-2403. Equal Employment Opportunity/Equal Access/Affirmative Action Institution.*

ASSISTANT PROFESSOR
PLANT BIOLOGY

The Institute of Biological Chemistry at Washington State University invites applications for a tenure-track Assistant Professor position to begin August 2003. Applicants must have a Ph.D. or equivalent as well as a strong record of research and publications in plant biochemistry, molecular genetics, genomics, or another area of modern plant biology. The ability and commitment to build a dynamic, well-funded program of international stature is essential. The Institute (**website: http://ibc.wsu.edu**) provides an excellent research environment with more than 120 Scientists; excellent equipment and facilities; and ready access to specialized techniques in biochemistry, cell biology, and genomics. Candidates should submit curriculum vitae, statement of research interests, and a description of future plans. In addition, applicants should arrange for three letters of reference to be sent to: **Dr. John Browse, Search Committee Chair, Institute of Biological Chemistry, Washington State University, P.O. Box 646340, Pullman, WA 99164-6340. Telephone: 509-335-5496; FAX: 509-335-7643; e-mail: maertens@wsu.edu**. Review of applications will begin on September 17, 2002, and continue until the position is filled. *Equal Employment Opportunity/Affirmative Action/Americans With Disabilities Act.*

POSTDOCTORAL RESEARCH ASSOCIATE positions are available at the Lankenau Institute for Medical Research (suburban Philadelphia, Pennsylvania) to study the involvement of nuclear matrix proteins and DNAPK/Ku in the regulation of DNA double-strand break repair (see **Mauldin, et al.**, *Nucleic Acids Research* **30**:18). Applicants should have a strong background in molecular biology and protein biochemistry. Interested candidates should send résumés and names of three references to: **Thomas D. Stamato, Ph.D., Lankenau Institute for Medical Research, 100 Lancaster Avenue, Wynnewood, PA 19096. FAX: 610-645-2005; e-mail: stamatot@mlhs.org**.

POSITIONS OPEN

TENURE-TRACK ASSISTANT PROFESSOR
BIOLOGICAL PHYSICS
Department of Physics and Astronomy
Vanderbilt University

Applications and nominations are invited for a tenure-track Assistant Professor position in biological physics. There are no restrictions on the subfield of biological physics. The successful candidate will be expected to establish a leading, independent research group and to be highly effective in teaching at the undergraduate and graduate levels. Biophysical research areas within the Department include bioelectric and biomagnetic phenomena; nonlinear dynamics of molecular and cellular systems; cellular instrumentation and control; applications of IR, visible, and UV lasers to biological systems; bioinformatics; and applications of tunable, monochromatic X-rays to medical imaging and biological physics. Candidates can take advantage of the unique opportunities for interdisciplinary research through the W.M. Keck Free Electron Laser Center and collaborations with the Schools of Engineering and Medicine. The successful candidate will be expected to play an important role in a Universitywide initiative in biophysics and bioengineering, which would include the hiring of additional faculty in this and related fields in the near future. In addition, the candidate may benefit from other substantial University initiatives in neuroscience and in nanoscience and nanoengineering. Applications including a résumé should be sent to:

John P. Wikswo
Chair, Biological Physics Search Committee
Vanderbilt University
VU Station B 351807
Nashville, TN 37235-1807
FAX: 615-343-7263
E-mail: john.wikswo@vanderbilt.edu

The candidate should arrange to have three confidential letters of recommendation sent to this address. Review of applications will begin November 1, 2002, and will continue until the position is filled. *Vanderbilt University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are particularly encouraged to apply.*

IMMUNOLOGIST
TENURE-TRACK FACULTY POSITION

The Department of Microbiology and the Linus Pauling Institute, Oregon State University, have a full-time, nine-month **ASSISTANT PROFESSOR** position available. We seek an individual who will establish an extramurally funded research program, preferentially addressing the role of oxidative stress and/or dietary constituents in immune responses associated with allergy and teach immunology at the graduate and undergraduate levels. Requires a Ph.D. degree in biological sciences with postdoctoral research experience in immunology or microbial pathogenesis. Salary is commensurate with experience. For full consideration, send a letter of application; curriculum vitae; a statement of research/teaching goals; and three letters of reference on or before September 30, 2002, to: **Immunologist Selection Committee, Department of Microbiology, 220 Nash Hall, OSU, Corvallis, OR 97331-3804**. Complete announcement at **website: http://osu.orst.edu/jobs; Telephone: 541-737-1848**. *OSU is an Affirmative Action/Equal Opportunity Employer.*

The Department of Chemistry of the University of Chicago invites applications from outstanding individuals for the position of **ASSISTANT PROFESSOR** of chemistry. This search is in the areas broadly defined as inorganic, organic, physical/theoretical, and biological and materials chemistry. Applicants should submit curriculum vitae, a list of publications, and a succinct outline of their research plans. Candidates should arrange for three letters of recommendation to be sent to: **James R. Norris, Jr., Chairman, Department of Chemistry, the University of Chicago, 5735 South Ellis Avenue, Chicago, IL 60637**. Deadline for application materials is October 18, 2002. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

MICROBIOLOGY/MICROBIAL ECOLOGY

The Biology Department of St. Lawrence University invites applications for a tenure-track position starting fall 2003 at the **ASSISTANT PROFESSOR** level. A Ph.D. as of fall 2003 is required. The successful candidate will be expected to teach introductory microbiology and genetics and to develop upper-level courses according to his/her expertise. Other areas of interest to the Department include microbial ecology, evolution, bioinformatics, molecular biology, and microscopy. Preference will be given to candidates who can bridge the molecular/cellular and the ecological/evolutionary disciplines. A demonstrated expertise in the use of computers and instructional technologies is also preferred.

The successful candidate will also be expected to participate in our introductory biology courses that offer an investigational, inquiry-based, collaborative, and personalized learning environment. This would include teaching in these courses on a rotational basis. A demonstrated expertise in the use of computers and instructional technologies is preferred. The normal academic load is two courses per semester. The development of a research program that involves undergraduate student majors will also be expected.

As part of the general education curriculum at St. Lawrence, all first-year students enroll in a team-taught course that seeks to develop skills in critical thinking, writing, and research. The successful tenure-track candidate will have the opportunity to teach in the First-Year Program. Interested candidates should submit a letter of application, curriculum vitae, a statement of teaching experience and philosophy that reflects innovative and progressive pedagogies, a statement of research interest, and have three letters of recommendation forwarded to: **Dr. T. Budd, Biology Department, St. Lawrence University, Romoda Drive, Canton, NY 13617**. Applications will be reviewed until the position is filled.

St. Lawrence University, chartered in 1856, is the oldest coeducational university in New York State. Please see the University **website: http://www.stlawu.edu** and the biology **website: http://it.stlawu.edu/~biology** for more information.

St. Lawrence University is an Affirmative Action/Equal Employment Opportunity Employer. Women, minorities, veterans, and persons with disabilities are encouraged to apply.

TENURE-TRACK POSITIONS
Stanford University School of Medicine

The Department of Pathology seeks outstanding Scientists for two tenure-track appointments as **ASSISTANT** or **ASSOCIATE PROFESSOR.** Successful candidates are expected to develop high-quality, independent research programs in an area broadly related to molecular and cellular mechanisms of disease. The Department of Pathology supports high-quality basic science research programs and Investigators maintain strong associations with other departments on campus. Areas of investigation range broadly and include genomics, proteomics, cell and developmental biology, biochemistry, cancer biology, cell signaling, immunology, and studies of human disease in animal models. Applicants with Ph.D., M.D., or combined degrees will be considered. While these are primarily research positions, there are possibilities for qualified applicants to participate in clinical activities. Applicants should submit curriculum vitae and bibliography together with a brief description of past and present scholarly interests and accomplishments and a concise statement of plans for future research. These and the names of three references should be sent to: **Stephen J. Galli, M.D., Chair, Department of Pathology, Stanford University School of Medicine, Stanford, CA 94305** ideally by November 1, 2002. The Search Committee is co-chaired by **Gerald Crabtree** and **Peter Jackson** and includes **Jeffrey Axelrod, Eugene Butcher, Michael Cleary, Arend Sidow, Teresa Wang,** and **Irving Weissman**. *Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages application from such candidates.*

Department of Health and Human Services
National Institutes of Health
National Institute of Dental and Craniofacial Research
Tenure Track Position in Molecular Structural Biology

With nation-wide responsibility for improving the health and well being of all Americans, the Department of Health and Human Services oversees the biomedical research programs of the National Institutes of Health and those of NIH's research Institutes.

The National Institute of Dental and Craniofacial Research, a major research component of the National Institutes of Health (NIH) and the Department of Health and Human Services, is recruiting for a tenure-track scientist to pursue research in molecular structural biology.

The successful candidate must have a Ph.D., D.D.S, M.D. or equivalent degree and will establish a vigorous experimental program focusing on structure-function relationships in biological molecules. Candidates should have demonstrated expertise in using NMR or NMR/X-ray diffraction techniques to derive information about molecular structure and dynamics at the molecular level and to relate such information to function.

For more information regarding scientific issues relating to this position, please contact Dr. Henning Birkedal-Hansen, Scientific Director, NIDCR (**hbhansen@dir.nidcr.nih.gov**)

To apply, please send a copy of your curriculum vitae, a one-two page summary of your research interests and names and addresses of three references to: **Ms. Judy Dulovich, NIH/National Institute of Dental and Craniofacial Research, Human Resources Mgmt Branch, 31 Center Drive, Building 31, Room 2C39, MSC-2290, Bethesda, MD 20892-2290, telephone 301-496-6971**. Applications will be accepted through **September 30, 2002**.

For additional information on this position, and for instructions on submitting your application, please see our website, at: **http://www.nidr.nih.gov/**.

HHS/NIH is an Equal Opportunity Employer

MAYO CLINIC

Research Scientists: Cell Adhesion — Angiogenesis
Rochester, Minnesota

The Mayo Clinic Cancer Center, the Department of Medicine, and the Department of Biochemistry Molecular Biology announce openings for geneticists, and cell and molecular biologists at the Assistant, Associate, and Professor levels to study the molecular basis of cell adhesion, cell-cell contact, and angiogenesis. Qualified individuals are expected to initiate and maintain an outstanding, extramural-funded, research program in these fields as they apply to cancer or cardiovascular diseases. Requirements include evidence of an ability to obtain extramural funding and to work in a collaborative environment. Opportunities at Mayo include well-equipped core facilities, interaction with talented basic and clinical scientists with an outstanding track record in obtaining extramural federal funding, and access to a wide array of clinical material. Women and minorities are encouraged to apply.

Applicants should send a curriculum vitae and a statement of research interests by e-mail or mail to:

Ms. Kristi Simmons
(Cancer Cell Biology Search)
Mayo Clinic
Guggenheim 1701
200 First St. S.W.
Rochester, MN 55905
simmons.kristi@mayo.edu

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

Arena Pharmaceuticals, Inc.

Leading San Diego based GPCR Biotechnology Company currently expanding its *in vivo* Pharmacology Department and seeking motivated candidates for the following positions:

Senior Research Scientist/Associate Director – Pain
- Ph.D. with 7+ years experience in acute and chronic pain.
- 4+ years in pharmaceutical industry with supervisory and drug development experience required.
- Excellent knowledge of pain-modulatory circuits necessary.
- Main responsibility will be in the development of a research program focusing on the discovery of orphan GPCRs as novel receptor targets for development of pain therapies and the rapid assessment of novel analgesic compounds using behavioral/electrophysiological approaches.
- **Job Code: VIV009**

Research Scientist – Obesity/Metabolism
- Ph.D. with 4+ years experience in endocrinology and metabolism along with excellent neuroanatomical knowledge required.
- Experience with rodent models of dietary-induced and genetic obesity, observational and microstructural analysis of food intake, thermogenesis, indirect calorimetry and body composition required.
- Experience in pharmaceutical industry desirable.
- Main responsibilities will include the characterization of *in vivo* function of orphan GPCRs related to metabolic regulation and the evaluation of the therapeutic potential of drugs to treat obesity/metabolic disorders.
- **Job Code: VIV010**

Research Associate/Senior Research Associate – Behavioral Pharmacology
- B.S./M.S. in neuroscience, behavioral pharmacology, psychopharmacology or related field.
- 6+ years experience in pharmaceutical industry required with excellent track record in behavioral pharmacology and drug profiling.
- Knowledge of computer programming a plus.
- The successful candidate will be a member of a team dedicated to drug discovery and behavioral validation of novel GPCR targets for the treatment of neuropsychiatric disorders and obesity.
- Main responsibilities will include characterization and validation of rodent CNS models, with a particular focus on models of obesity/feeding behavior, schizophrenia, anxiety, depression and cognition. The candidate will focus on the evaluation of drugs in those models and the phenotyping of genetically modified rodents.
- **Job Code: VIV011**

Research Associate – Microdialysis/Analytical Chemist
- B.S./M.S. in chemistry or related discipline with 4 years of lab experience.
- Extensive experience with analytical chemistry techniques and a thorough knowledge of HPLC theory and practical applications are required.
- 1 year experience within the pharmaceutical industry a plus.
- Experience with *in vivo* microdialysis a plus.
- The candidate will be responsible for running and maintaining HPLC separations using narrow and microbore systems with electrochemical and fluorescence detection.
- **Job Code: VIV012**

Arena offers an exciting work environment, competitive salary, excellent benefits package, including 401(k) and stock options. Email responses to: **jobs@arenapharm.com**. Send or fax resumes to **6166 Nancy Ridge Drive, San Diego, CA 92121; Fax: 858 453-7210**. Please reference appropriate job code.

POSITIONS OPEN

FACULTY POSITION
PLANT PHYSIOLOGY
The University of British Columbia
Department of Botany

The Department of Botany invites applications for a tenure-track faculty position at the level of **ASSISTANT PROFESSOR** in the area of plant physiology. Candidates should have a Ph.D. and postdoctoral experience with a demonstrated record of research excellence in plant physiology. Applicants with expertise in any area of plant physiology from whole plant physiology to cellular/molecular physiology are encouraged to apply. Successful candidates will be expected to establish an internationally competitive research program and will contribute to undergraduate teaching in the areas of plant physiology, cell physiology, and/or introductory biochemistry within the UBC Biology program. Deadline for applications is November 1, 2002. Applicants should arrange to have three letters of reference sent by mail and send curriculum vitae and a statement of research and teaching interests by mail or e-mail to:

Dr. Anthony Glass, Chair
Physiologist Search Committee
Department of Botany
University of British Columbia
Number 3529, 6270 University Boulevard
Vancouver, BC V6T 1Z4 Canada
E-mail: aglass@interchange.ubc.ca

UBC hires on the basis of merit and is committed to Employment Equity. All qualified candidates are encouraged to apply; however Canadians and permanent residents of Canada will be given priority.

BIOCHEMISTRY, TENURE-TRACK, Dickinson College. ACS-accredited department seeks an **ASSISTANT PROFESSOR** holding a Ph.D. in biochemistry or a related field for position available fall 2003. Teaching responsibilities include a team-taught course in biochemistry, introductory chemistry courses, and advanced biochemistry. All department members participate in a project-based integrated laboratory course. A commitment to innovative laboratory-oriented teaching is essential. Establishment of an active undergraduate research program in biochemistry is expected. Faculty will contribute to the Biochemistry and Molecular Biology program, for which a major was established in 1998. The Department is well equipped including a tissue culture facility, 300 MHz NMR, scintillation counter, and molecular modeling laboratory. Dickinson is a national, highly selective liberal arts college in Carlisle, Pennsylvania. Send curriculum vitae, undergraduate and graduate transcripts, teaching philosophy, summary of research plans, and three letters of recommendation to: **Professor Cindy Samet, Chair, Department of Chemistry, Dickinson College, P.O. Box 1773, Carlisle, PA 17013**. Review of completed applications will begin immediately and continue until the position is filled. *Dickinson College is an Affirmative Action/Equal Opportunity Employer; women and minority candidates are especially encouraged to apply.*

FACULTY POSITION IN CHEMISTRY
University of California at Berkeley
Department of Chemistry

The Chemistry Department at the University of California, Berkeley, solicits applications for a faculty position as **ASSISTANT PROFESSOR** of chemistry beginning in the fall of 2003. Creative and energetic candidates who demonstrate potential for excellence in research and teaching are sought, particularly in the fields of inorganic and bioinorganic chemistry.

Applicants should send curriculum vitae and a proposed research program and arrange to have three letters of recommendation sent to: **Chair, Faculty Recruiting Committee (Number 722), Department of Chemistry, University of California, Berkeley, CA 94720-1460**. The deadline for receipt of applications is November 1, 2002; applications will be reviewed beginning September 1, 2002. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR, biochemistry. The Department of Biochemistry, Biophysics, and Molecular Biology (BBMB) at Iowa State **University (website: http://www.bb.iastate.edu)** seeks an Assistant Professor to develop a research program in plant biochemistry. This position is affiliated with the Plant Sciences Institute **(website: http://www.plantsciences.iastate.edu)**, a major research emphasis of the university, which has particular interest in developing the area of functional genomics. High-quality laboratory space and generous start-up support are available. In addition, a new metabolism laboratory is being established with a $2.3 million grant from the W.M. Keck Foundation. Candidates must have a Ph.D. or equivalent, postdoctoral experience, and be committed to excellence in research and teaching. Preference will be given to those with research accomplishments in plant biochemistry and/or functional genomics methodology and who articulate a clear vision for the development of a nationally recognized research program. Applicants should submit a cover letter, curriculum vitae, description of previous research accomplishments, explanation of future scientific objectives, and arrange for three letters of recommendation to be sent to: **BBMB Faculty Search, 1210 Molecular Biology Building, Iowa State University, Ames, IA 50011**. To guarantee consideration, applications should be received by November 1, 2002. *Iowa State University is an Equal Opportunity/Affirmative Action Employer. Applications from women and minority candidates are especially encouraged.*

MANAGER

The Department of Radiology, Beth Israel Deaconess Medical Center (BIDMC), Harvard Medical School, invites applications for a full-time, tenure-track faculty position as Manager of the BIDMC Center for Basic MR Research.

Applicants must have a Ph.D. in medical physics, biomedical engineering, or a related field and be willing to work with animals. Facilities include an 8.5 Tesla 9 cm bore MRI system and a 4.7 Tesla 40 cm bore system (Bruker Instruments). General responsibilities include daily maintenance, installation and testing of new software, and training and monitoring new users. The position also offers substantial opportunities for research collaboration with a number of research groups at BIDMC and the medical school. Salary and academic rank will be commensurate with experience and qualifications. Interested applicants should send curriculum vitae to: **Deborah Burstein, Ph.D., 4 Blackfan Circle, Room 148, Boston, MA 02115**. Applications by **e-mail: dburstei@caregroup.harvard.edu** are acceptable. Visit our **website: http://www.radiology.bidmc.harvard.edu**. *Beth Israel Deaconess Medical Center is an Equal Employment Opportunity/Affirmative Action Employer.*

POSITION OPEN
School of Medical Technology and Engineering
National Yang Ming University, Taiwan

The School of Medical Technology and Engineering, National Yang Ming University in Taipei, Taiwan, seeks candidates for the Dean at **PROFESSOR** level starting February 1, 2003. Applicants for the position should be under 60 years old and have the nationality of Taiwan, Republic of China. Candidates with disciplines in medical technology, radiological technology, physical therapy, medical engineering, biotechnology in medicine, radiological science, and rehabilitation science are encouraged to apply. Applicants should send curriculum vitae; one letter of recommendation; and a statement of scientific vision, management, and leadership skills to lead the development of this school not later than September 15, 2002, to:

Dean Search Committee
c/o Professor and Director F.D. Chen
Institute of Radiological Sciences
National Yang Ming University
155, Section 2, Li-Nong Street, Taipei, Taiwan

POSITIONS OPEN

RESEARCH FACULTY AND POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS

Research-track faculty and Postdoctoral positions available to investigate (1) signal transduction and molecular control of microvascular barrier function in inflammation and burns, (2) leukocyte-endothelium interaction and endothelial cell-cell and cell-matrix adhesion, and (3) gene regulation and molecular therapy of diabetic cardiovascular complications. State-of-the-art techniques are routinely used in the laboratory including fluorescence confocal microscopy, intravital microscopy, isolation and perfusion of microvessels, DNA/protein transfection, real time RT-PCR, and cDNA/protein microarray analysis of gene profiles and protein-protein interactions. Applicants must have a Doctoral degree in related areas. Experience in molecular cell biology or vascular biology is preferred. Research faculty applicants must have previous postdoctoral experience and publications in related journals. Salaries for positions may be negotiable and are based on qualifications and experience. Faculty applicants send curriculum vitae, and names of three references to: **Dr. Sarah Yuan, Department of Surgery, Texas A&M University Health Science Center, 702 Southwest HK Dodgen Loop, Temple, TX 76504. E-mail: yuan@tamu.edu**. Postdoctoral applicants apply for Job Number 021613 online at **website: https://TAMUjobs.tamu.edu**. *TAMUS is an Equal Opportunity/Affirmative Action Employer committed to diversity.*

FACULTY POSITIONS
Weill Medical College of Cornell University
Department of Pharmacology

Candidates are sought for tenure-track positions at the level of **ASSISTANT PROFESSOR**. Areas for recruitment include all aspects of pharmacology such as cardiovascular pharmacology, clinical pharmacology, neuropharmacology, pharmacogenomics, drug metabolism, and cancer pharmacology. Cell signaling pathways, biological networks, and chemical biology related to pharmacology are also areas of interest. The responsibilities of this position include development of an active, independent, and funded research program and participation in both medical and graduate student teaching programs in the Department. Applicants should send curriculum vitae, a summary of proposed research, a description of their interest in pharmacology, and should arrange to have letters sent from at least three Scientists who can evaluate the candidate's accomplishments. Weill Medical College of Cornell University is a part of the New York Presbyterian-Weill Medical Center and is adjacent to Memorial Sloan-Kettering Cancer Center and Rockefeller University. Applications should be sent to: **Chair, Pharmacology Search Committee, Box 70, Pharmacology Department, Weill Medical College, 1300 York Avenue, New York, NY 10021. FAX: 212-746-8858**. *Equal Employment Opportunity/Affirmative Action/Minorities/Females/Disabled/Veterans.*

INSTRUCTOR, pediatric pulmonology: Faculty appointment immediately available in an active group studying cystic fibrosis. Position duties will include research into gene array analysis of tissues and cells from cystic fibrosis mice and patients as well as teaching a substantial portion of a course on gene array analysis. Requirements for the position include the Ph.D. degree, skills in cell and molecular biology, and statistical analysis of very large data arrays as well as understanding of ion transport and inflammation as it relates to cystic fibrosis. Excellent computer skills are required. Teaching experience and skills are a plus. Application must include curriculum vitae and names of three references with contact information. Apply to: **Ellis D. Avner, M.D., Chair, Department of Pediatrics; e-mail: pbd@po.cwru.edu** (preferred) or by mail to: **E.D. Avner, M.D., Chairman, Department of Pediatrics, Case Western Reserve University, Rainbow Babies' and Children's Hospital, 2101 Adelbert Road, Cleveland, OH 44106.** *CWRU is an Equal Opportunity/Affirmative Action Employer. Applications from women and minorities are encouraged.*

H. Lee Moffitt Cancer Center & Research Institute, located on campus at the University of South Florida (Tampa Campus), is one of only 40 NCI comprehensive cancer centers in the nation. We are seeking an individual who will be responsible for conducting research in a 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.

POST DOCTORAL ASSOCIATE

Qualifications include a Ph.D. in Biology, Biological Sciences, Life Sciences or a related field, as well as an interest in cancer research. Experience with gene expression by microarrays, evaluation of protein biochemistry with 2D gels, with animal models, the yeast two hybrid system and tissue culture is desirable. Excellent English skills (both written and verbal) are also necessary.

Outstanding research environment and competitive compensation. Send curriculum vitae and the names of three references to: **Nadine Stanton, H. Lee Moffitt Cancer Center & Research Institute, 12902 Magnolia Drive, MRC03E, Tampa, FL 33612 or e-mail to stantonm@moffitt.usf.edu**

www.moffitt.usf.edu

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

The University of South Florida is an EO/AA/EA institution. For disability accommodations, contact C. Saunders at (813) 975-7804 a minimum of 5 working days in advance. According to Florida law, applications and meetings regarding them are open to the public.

Department of Health and Human Services
National Institutes of Health
National Institute on Aging

POSTDOCTORAL POSITIONS

With nation-wide responsibility for improving the health and well being of all Americans, the DHHS oversees the biomedical research programs of the National Institutes of Health (NIH) and those of NIH's research institutes. The National Institute on Aging (NIA), a major research component of the NIH and the DHHS, is recruiting for 2 postdoctoral research positions for individuals interested in multidimensional analyses and multivariate statistics of a wide variety of biological, epidemiological, and genetic data from humans and other species. For one position, analytic strategies and techniques for multidimensional analyses of rates of change in longitudinal studies, epidemiological follow-up studies, and growth studies are of particular interest. For the other position, analyses of network biology are linked to the parsing and comparison of microscopic images, including the visualization of processes in real time [see *Science* **297:**39-40, 2002]. Funding is for 3 years initially with the possibility of extending for 2 years more. The positions are in the Laboratory of Genetics of the Intramural Research Program of the NIA, located on the Johns Hopkins Bayview Campus in Baltimore. Candidates should possess an MD and/or PhD and have less than five years of relevant postdoctoral experience.

Applications will be accepted until the positions are filled. Please send letter, CV, and 3 letters of reference to: **Dr. David Schlessinger, Laboratory of Genetics, NIA/NIH, 333 Cassell Drive, Suite 3000, Baltimore, MD 21224.**

HHS/NIH is an Equal Opportunity Employer

UNIVERSITY OF OXFORD

Department of Physics

Bio-nanotechnology IRC

Postdoctoral Research Fellowships in Scanning Probe Microscopy

Grade RS1A: £17,626 - £26,491 p.a.

Applications are invited for EPSRC-funded three-year postdoctoral research fellowships in the field of scanning probe microscopy, starting 1st October 2002 or as soon as possible thereafter. Candidates should have strong research experience in atomic force microscopy, electrochemical and/or conductive AFM, scanning tunneling microscopy, single molecule electron transfer or nanoelectronics, and be keen to work in an inter-disciplinary research team including physical and life scientists.

The experimental projects will be based in the new Bio-nanotechnology IRC at the Department of Physics. Electronic properties of proteins and biological molecules will involve collaboration with Dr Jason Davis (Chemistry), from whom further particulars can be obtained (jason.davis@chemistry.oxford.ac.uk). Force measurements of membrane proteins will be done in collaboration with Profs John Pethica (Materials) (john.pethica@materials.ox.ac.uk) and Anthony Watts (Biochemistry) (anthony.watts@bioch.ox.ac.uk).

Applications including CV and the names and contact details of three referees should be sent by 30th September 2002 to the Administrator, Department of Physics, Clarendon Laboratory, Parks Road, Oxford OX1 3PU (e.davies1@physics.ox.ac.uk) quoting reference number DE02/018.

The University is an Equal Opportunities Employer.

ASSISTANT PROFESSOR

Plant Biology

Cold Spring Harbor Laboratory is accepting applications for a faculty position in Plant Genetics at the Assistant Professor level. We seek outstanding candidates who use plant systems to address fundamental questions in biology. The successful candidate will join a highly interactive group of plant biologists working in the areas of developmental biology, maize and Arabidopsis genetics, epigenetic inheritance and genomics.

Cold Spring Harbor Laboratory has a highly interactive environment with a very strong history of plant research. An agricultural field station, including twelve acres of farmland and 4200 square feet of greenhouse space, is located within five minutes of the Lab. The Laboratory was a major contributor to sequencing the Arabidopsis and rice genomes and continues to maintain a strong program in comparative and functional genomics in plants. The Laboratory has recently opened a new technology center, which contains a state-of-the-art microarray facility, the genome sequencing center, the Arabidopsis genetrap database (http://genetrap.cshl.org) and the maize targeted mutagenesis database (http://mtm.cshl.org/).

Existing research at CSHL is listed on our Web site: **www.cshl.org**

Applicants should submit a CV, summary of research accomplishments, a research proposal, and names of three references to: **Dr. Bruce Stillman, Director, Cold Spring Harbor Laboratory, 1 Bungtown Road, Cold Spring Harbor, NY 11724; E-mail: stillman@cshl.edu**

CSHL COLD SPRING HARBOR LABORATORY

Cold Spring Harbor Laboratory is an equal opportunity employer and encourages applications from women and minorities.

POSITIONS OPEN

FACULTY POSITION
University of North Carolina at Chapel Hill
Division of Medicinal Chemistry and Natural Products

The Division of Medicinal Chemistry and Natural Products invites applications for a tenure-track position available in the 2002/2003 academic year. Applicants at all levels are encouraged to apply. Candidates for **ASSISTANT PROFESSOR** must have a Ph.D. degree and postdoctoral experience is desirable. The position requires development of an internationally recognized program of scholarly research and the demonstration of commitment to excellence in teaching at the professional and graduate levels. Programs in all areas of medicinal chemistry, pharmacology, and biochemistry will be considered but preference will be given to studies that focus on drug discovery and design and the function of molecular targets. Applicants should submit curriculum vitae, publication list, a concise description of proposed research, and arrange for four letters of recommendation to be sent to: **Professor Harold Kohn, Chair, Division of Medicinal Chemistry and Natural Products, School of Pharmacy, University of North Carolina at Chapel Hill, CB Number 7360, Beard Hall, Chapel Hill, NC 27599-7360.** Applications will be reviewed upon receipt and continue until the position is filled. *The University of North Carolina at Chapel Hill is an Equal Opportunity Employer. Women and members of minority groups are encouraged to apply.*

NEUROSCIENTIST
Wake Forest University School of Medicine

The Department of Neurobiology and Anatomy invites applications for a **TENURE-TRACK FACULTY** position. The level of appointment will be commensurate with experience, and applicants should have postdoctoral experience and a strong record of scholarship. The Department is seeking an outstanding individual who is using modern systems, cellular, molecular, or psychophysical approaches to study neuroplasticity. Preference wll be given to those applicants with experience/interests that complement(s) that of current faculty. The successful candidate will become part of the large and active neuroscience community at the University, which includes the Departmental Program and an interdisciplinary program in neuroscience as well as two training programs focused on multiple sensory systems and developmental neurobiology. For more information on the Department and areas of research emphasis, visit our **website: http://www.wfubmc.edu/nba.html.** Candidates should send curriculum vitae, statement of research interest, and three letters of recommendation to: **Search Committee, Department of Neurobiology and Anatomy, Wake Forest University School of Medicine, Winston-Salem, NC 27157-1010.** *Wake Forest University School of Medicine is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH SCIENTISTS in optics, photonics, and material areas to work in diffractive optics, microoptics, polymer waveguide, waveguide modulation, polymer poling, material synthesis, or sol gel processing, and product research and development and marketing. Degree and experience required. Send résumé: **New Span Opto-Technology, 9380 S.W. 72nd Street, B–180, Miami, FL 33173, Attention: G. Wang. E-mail: gwang@nsotech.com.**

SENIOR STAFF ASSOCIATE

PROJECT COORDINATOR for study of epilepsy. Master of public health or equivalent required. Send curriculum vitae to: **Dale Hesdorffer, Ph.D., G. H. Sergievsky Center, Columbia University, 630 West 168th Street, P and S Unit 16, New York, NY 10032.** *We take Affirmative Action toward Equal Employment Opportunity.*

POSITIONS OPEN

EVERGREEN
The Evergreen State College
Olympia, Washington

CHEMISTRY FACULTY POSITIONS

ORGANIC and **PHYSICAL/INORGANIC CHEMISTS** with wide-ranging academic interests sought for faculty positions at nationally recognized, progressive public liberal arts college in the beautiful Pacific Northwest. Faculty in the sciences at The Evergreen State College enjoy the opportunity to develop and teach interdisciplinary programs with colleagues from other disciplines including natural and social sciences, humanities, and arts and to establish research collaborations with other faculty and students in a diverse, multicultural environment. Salary based on experience and degrees with an excellent benefits package and relocation assistance. Review of applications will begin November 15, 2002. Visit **website: http://www.evergreen.edu/facultyhiring** or call: **Lisa Strange, Faculty Hiring Coordinator; Telephone: 360-867-6861.** Write to: **Faculty Hiring, The Evergreen State College, L–2211, 2700 Evergreen Parkway N.W., Olympia, WA 98505.** *Affirmative Action/Equal Opportunity Employer/Americans With Disabilities Act.*

ORGANIC CHEMIST AND PHYSICAL CHEMIST

The California State University, Hayward, Department of Chemistry and Biochemistry invites applications for two **TENURE-TRACK POSITIONS** for the 2003-2004 academic year. For the Organic Chemist position (Number 03-04 CHEM-ORGANIC/BIO-TT), a specialty in bioorganic chemistry is preferred; for the Physical Chemist position (Number 03-04 CHEM-PHYS/INORGANIC-TT), an emphasis in materials science, nanotechnology, electrochemistry, or biophysical chemistry is preferred. Successful candidates for each position will have a strong commitment to teaching and will be expected to establish an externally funded research program appropriate for undergraduates and M.S. students. A Ph.D. degree is required; postdoctoral research and teaching experience are desirable. Applications including cover letter, curriculum vitae, publication list, brief statement of teaching philosophy and research plans, undergraduate and graduate transcripts, and three letters of recommendation should be sent to: **Dr. Richard Luibrand, Chair, Department of Chemistry and Biochemistry, California State University, Hayward, CA 94542.** Review of the applications will begin October 15, 2002, and will continue until the position is filled. *CSUH is an Equal Opportunity Employer and does not discriminate on the basis of age, race, color, national origin, sex, sexual orientation, or disability.*

ASSISTANT AND ASSOCIATE PROFESSOR POSITIONS

The Vascular Biology Center of Excellence at the University of Tennessee Health Science Center in Memphis is seeking qualified tenure-track faculty, primarily at the Assistant or Associate Professor level, in the area of vascular biology with a focus on angiogenesis. Successful candidates will have a Ph.D. or M.D. degree or both, two to five years of postdoctoral experience, a strong publication record, and current funding or strong funding potential. Laboratory and office space as well as start-up funds will be provided.

Please send your curriculum vitae, a letter detailing your research interests and long-term goals, date of availability, and the names and addresses of three references to: **Lisa K. Jennings, Ph.D., Director, Vascular Biology Center of Excellence, The University of Tennessee Health Science Center, Coleman Building H300, 956 Court Avenue, Memphis, TN 38163.**

The University of Tennessee is an Equal Employment Opportunity/Affirmative Action/Title VI/Title IX/Section 504/Americans With Disabilities Act/Age Discrimination in Employment Act Employer and encourages applications from qualified women and minorities.

POSITIONS OPEN

FACULTY POSITION
STRUCTURAL BIOLOGY
Department of Biochemistry and Molecular Biology
SUNY Upstate Medical University
Syracuse, New York

We invite applicants for a tenure-track position at the **ASSISTANT PROFESSOR** level for candidates with research interests and experience in X-ray crystallography. Through this position, the Department is expanding its commitment to structural biology. We have received a federal grant to establish an X-ray crystallography laboratory with substantial funding for equipment and other start-up expenses. Convenient access to a synchrotron source is available. Preference will be given to candidates whose interests complement existing departmental strengths in membrane proteins, nucleic acid-binding proteins, and multisubunit protein complexes. Applicants must have a Ph.D. or equivalent degree, postdoctoral experience, demonstrated research productivity, and a commitment to excellence in teaching medical and graduate students. Send letter of application, curriculum vitae, and descriptions of past research accomplishments and future research plans to: **Dr. Richard Cross, Department of Biochemistry and Molecular Biology, SUNY Upstate Medical University, 750 East Adams Street, Syracuse, NY 13210.**

Please have three letters of reference sent directly to the above address and include the names of the references in your application letter. Review of applications will begin October 15, 2002, and continue until the position is filled. Further information is available at **website: http://www.upstate.edu/biochem.** *An Affirmative Action/Equal Employment Opportunity/Americans With Disabilities Act Employer.*

Extension/Research-Integrated Pest Management. **ASSISTANT PROFESSOR**, Department of Entomology. University of Wisconsin–Madison invites applications for full-time, 12-month, tenure-track faculty position (70% extension, 30% research). Incumbent to provide leadership in developing and implementing insect pest management programs affecting agronomic crops (alfalfa, soybean, corn). Ph.D. or equivalent required. See **website: http://www.entomology.wisc.edu.** for details. Send current curriculum vitae, undergraduate and graduate transcripts, statement of extension and research interests, and three letters of recommendation to: **Carol Scheehle, Department Administrator, 237 Russell Laboratories, 1630 Linden Drive, Madison, WI 53706.** Deadline: October 15, 2002, or until suitable candidate is found.

The Department of Anesthesia and Critical Care at the Massachusetts General Hospital/Harvard Medical School seeks to recruit a basic Scientist as an **ASSISTANT PROFESSOR** to conduct full-time research and research training on the mechanisms of general anesthesia. The candidate should possess both neurophysiological and biophysical skills and a track record of published research on this problem.

Applications, which should include curriculum vitae, the names of four references, and a two-page research proposal, may be sent to: **Professor Keith W. Miller, Department of Anesthesia and Critical Care, Massachusetts General Hospital, Boston, MA 02114 U.S.A.**

Minorities and women are encouraged to apply.

POSTDOCTORAL FELLOWSHIP available immediately to investigate the effects of alcohol on hepatocyte pathology, fibrogenesis, and liver-specific gene regulation. Applicants should have an M.D. or Ph.D. degree and *be citizens or permanent residents of the United States.* Please send your curriculum vitae and the names and telephone numbers of three references to: **Dr. Esteban Mezey, Professor of Medicine, 921 Ross Research Building, The Johns Hopkins University School of Medicine, 720 Rutland Avenue, Baltimore, MD 21205.**

RAPID ACCESS TO PREVENTIVE INTERVENTION DEVELOPMENT - "RAPID" PROGRAM
National Cancer Institute

The National Cancer Institute announces the ongoing initiative: Rapid Access to Preventive Intervention Development (RAPID). RAPID will make available to academic investigators the preclinical and early clinical drug development contract resources of NCI's Division of Cancer Prevention. The goal of RAPID is the rapid movement of novel molecules and concepts from the laboratory to the clinic for clinical trials of efficacy. RAPID will assist investigators who submit successful requests by providing any (or all) of the pre-clinical and phase 1 clinical developmental requirements for phase 2 clinical efficacy trials. These include, for example, preclinical pharmacology, toxicology, and efficacy studies; bulk supply, GMP manufacturing, and formulation; and regulatory and IND support and phase 1 clinical studies. Suitable types of agents for RAPID may range from single chemical or biological entities to defined complex mixtures with the potential to prevent, reverse, or delay carcinogenesis. For more detailed information, visit the web site, **http://www3.cancer.gov/prevention/cadrg/**

Requests for RAPID resources are to be submitted as described in the web site. Written requests will be evaluated by a specially constituted RAPID panel, consisting of selected NCI staff and outside experts from academia and industry. Requests must be received on or before October 1, 2002. Applications should be submitted directly to the office listed below. Inquiries are encouraged, and the opportunity to clarify issues or questions is welcome. Please contact:

RAPID Program Official
Executive Plaza North, Room 2117
6130 Executive Blvd.
Bethesda, MD 20892
Rockville, MD 20852 (for express/courier service)
Telephone (301) 435-5011 Email: ikllj@nih.gov
or
Telephone (301) 594-0459: Email: jc94h@nih.gov; fax (301) 402-0553

Call for Proposals
BMBF Competition "Nanotechnology"

The Federal Ministry of Education and Research (BMBF) intends to give **young scientists** from Germany and abroad who are **experienced in heading a research group** the opportunity to work on new, basic research-oriented approaches in the nanosciences in Germany, independently and in their own team in order to

- generally improve career prospects in industry or science in Germany or
- encourage self-employment in the private sector (setting up businesses or spin-out companies).

The teams (staff: 1 group leader, 1-2 postdocs, 1-2 doctoral students, 1-2 technicians; investments and expendable materials: depending on the technical support required in each case) are to work for a period of 5 years on topics covering the technological use of physical, i.e., mechanical, electronic and optical phenomena characteristic of the nanometer scale (not mainstream developments aimed at merely reducing the size of today's microstructures, incl. microelectronics and those phenomena which can be achieved with individual molecules).

Non-repayable grants will be awarded to the projects selected by a jury.

Deadlines: 15 June 2002 (first call) and 15 October 2002 (second call).

Further information:
Dr G. Schumacher, PTJ-FZJ, D-52425 Juelich
tel +49(0)2461 61-3545; e-mail: G.Schumacher@fz-juelich.de

GMP | GENETICS, INC.

TECHNICIAN

GMP Genetics, Inc., is a new genetics company focused on deploying cutting-edge technologies to revolutionize human genetics. We are currently recruiting a Technician to work in our molecular genetics laboratory located in Waltham, Massachusetts. As a Technician in our molecular genetics laboratory, you would be joining a dynamic research team focused on the development and implementation of genetic diagnostic applications. You will be responsible for executing and analyzing experiments towards the development of diagnostic applications. Qualified candidates will have a Master's in genetics or relevant field and two years of experience working with molecular biology techniques. Industrial experience is preferred. Articulate communication skills (both verbal and written) and proficient MicroSoft office skills are all required. We offer a state-of-the-art laboratory, competitive salary with stock options, health insurance, a retirement plan, and 20 days of paid time off per year. For consideration, please e-mail your résumé to **e-mail: resumes@gmpcompanies.com**.

For more information, go to **websites: http://gmpgenetics.com** or **http://gmpcompanies.com**. Local candidates preferred and no telephone calls, please. *Equal Opportunity Employer.*

ASSOCIATE RESEARCH SCIENTIST

The Research Foundation at SUNY Plattsburgh seeks an Associate Research Scientist with expertise in stream-watershed dynamics for a National Science Foundation-funded project. The position is available for up to three years and involves watershed biogeochemistry, hydrogeology, and forest and aquatic invertebrate and fish response variables as they define ecological integrity in the Adirondack uplands. The Scientist will be affiliated with the Lake Champlain Research Institute (**website: http://www.plattsburgh.edu/lcri**) at SUNY Plattsburgh and will coordinate activities among research teams at collaborating institutions. Capability to lead the water chemistry and GIS components and expertise in multivariate statistics are desired. Position is available October 1, 2002, and is open until filled. Starting salary is $30,000 to $34,000 plus excellent fringe benefit package. To apply, send a cover letter addressing qualifications for the position, curriculum vitae, publication list, and names of three references to: **Research Foundation of SUNY, Box RF252, 101 Broad Street, Plattsburgh, NY 12901. FAX: 518-564-2157**. For more information, contact: **Lake Champlain Research Institute; Telephone: 518-564-3038; e-mail: timothy.mihuc@plattsburgh.edu**. *The Research Foundation of SUNY is an Equal Opportunity/Affirmative Action Employer.*

University of California San Diego School of Medicine: **PROFESSIONAL RESEARCH SCIENTIST** or **PROFESSORIAL POSITION** available at the University of California, San Diego, in the Department of Medicine, Division of Nephrology/Hypertension. UCSD wishes to recruit an individual with experience in experimental genome technologies to assist our effort in characterizing allelic variants underlying human diseases and disease drug responses (pharmacogenetics). Professorial appointments will carry teaching responsibilities. Series/rank of appointment commensurate with experience and salary based on established UCSD salary scales. Qualifications include a Ph.D. degree and practical experience in applying such human genome technologies as genotyping (SNP and/or microsatellites) or genomic DNA sequencing to discover SNPs. Reply by September 20, 2002, or until position is filled. Interested applicants should send a letter of interest, curriculum vitae, and names of three references to: **Dr. Daniel T. O'Connor, UCSD and San Diego Health Care System MC111–H, 3350 La Jolla Village Drive, San Diego, CA 92161. FAX: 858-642-6331; e-mail: doconnor@ucsd.edu**. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

EXPERIMENTAL CHEMICAL/BIOLOGICAL PHYSICIST

JILA, University of Colorado, and National Institute of Standards and Technology (NIST), Boulder, Colorado. JILA, a premier academic research institute administered jointly by NIST and the University of Colorado, is searching for outstanding Scientists at both the senior and junior level. Successful applicants would be expected to establish an internationally recognized research program involving graduate, undergraduate, and postdoctoral students and to participate in departmental teaching responsibilities. Particular interest will be toward candidates applying advanced techniques to exciting new areas of chemical physics and/or biomolecular science, building on JILA's strengths in optical and molecular sciences, laser technology, and precision measurement. More information about JILA can be found at **website: http://jilawww.colorado.edu**.

Interested persons should send curriculum vitae and a detailed research proposal (two to three pages) as well as arrange for three letters of recommendation to be sent to: **Search Committee, JILA, 440 UCB, University of Colorado, Boulder, CO 80309-0440.** Application review will begin October 15, 2002, and will continue until the position is filled. For further information, contact: **Professor Ellen Zweibel, JILA Chair; e-mail: chair@jila.colorado.edu; Telephone: 303-492-6787**.

The University of Colorado at Boulder and NIST are both committed to diversity and Equality in Education and Employment. U. S. citizenship preferred. JILA has a number of exceptionally successful Researchers from underrepresented groups and encourages applications from women and minority Researchers.

DIRECTOR AND SCIENTIST
Cell Biology Research

Aderans Research Institute, Inc. (ARI) in Philadelphia, Pennsylvania, is a wholly owned, new subsidiary of Aderans, a company committed to the production of mechanisms-based solutions to follicular problems. Aderans Research Institute seeks Scientists with expertise in cell biology as well as cell and tissue culture to participate in product development for the restoration of normal hair growth. Applicants for Director will be expected to have a Ph.D. and postdoctoral training with evidence of significant productivity. Applicants for Scientist will be expected to have either considerable related laboratory experience or significant academic training. Individuals at the Director and Scientist levels are offered an excellent compensation package. If you are interested in joining a leader, send your curriculum vitae to:

K. S. Stenn
Aderans Research Institute
3701 Market Street
Philadelphia, PA 19104
E-mail: kstenn@rcn.com

ARI is an Equal Opportunity Employer.

STAFF INVESTIGATOR POSITION
Department of Dermatology
Henry Ford Health System

The Department of Dermatology at the Henry Ford Health System is seeking Ph.D. or M.D./Ph.D. Investigators to develop independent research programs in cutaneous biology which will augment current programs in T cell biology and pigment cell biology. Applicants will be expected to develop externally funded research programs in addition to receiving substantial internal support. Please send letter of interest describing future research plans, curriculum vitae, and names of three references to:

Henry W. Lim, M.D.
Clarence S. Livingood Chair
Department of Dermatology
Henry Ford Hospital K–16
Detroit, MI 48202

Henry Ford Health System is an Equal Opportunity Employer.

POSITIONS OPEN

Torrey Mesa
RESEARCH INSTITUTE
Syngenta Research & Technology
syngenta

Torrey Mesa Research Institute, a research institute of Syngenta Research and Technology, is one of the largest single fully funded research endeavors dedicated to agricultural genomics, consumer health, and post-genomics technology. As an innovative and team-oriented company, we develop and apply cutting-edge biotechnology to match genes with traits for improved agribusiness products including consumer and animal health products. We currently seek the following talented individual:

STAFF SCIENTIST

The Consumer Health Department at Torrey Mesa Research Institute is seeking a motivated individual to join an interdisciplinary team involved in the characterization of metabolic enzymes. This position requires a Ph.D. in biochemistry or molecular biology with at least three years of relevant postdoctoral experience in protein purification, enzymology, recombinant protein expression, and assay development. The successful candidate will have a strong track record of publications, excellent interpersonal and written communication skills, and the ability to develop strategies for the characterization of multifunctional enzyme complexes.

TMRI offers excellent compensation and a great benefits package including 401(K) with match and immediate vesting. For confidential consideration, please send cover letter indicating position of interest and résumé including salary history and expectations to: **Torrey Mesa Research Institute, Attention: Job Code SSNPB/MLAN-SCI, 3115 Merryfield Row, San Diego, CA 92121-1102. FAX: 858-812-1096.** *Equal Opportunity Employer.*

LABORATORY MANAGER, RADIOIMMUNOASSAY: Eastside biomedical reproductive health research organization seeks experienced Radioimmunoassay Laboratory Manager to be responsible for the supervision and management of a bioanalytical hormone assay laboratory and to participate in the development of assay methods for new compounds. Other duties include maintaining quality controls and safety standards; documenting GLP compliance; prompt, accurate reporting of results; and supervising/training technicians. Requires M.S. or Ph.D. in chemistry or biological science, demonstrated experience in radioimmunoassay method development, and minimum of three years of related work experience. Excellent benefits and competitive salary. Send curriculum vitae/résumé with letter referencing Job Number 24/02 to: **Mr. D. Lewis, Population Council, One Dag Hammarskjold Plaza, New York, NY 10017. E-mail: jobs@popcouncil.org; FAX: 212-754-0963.** For complete description, see **website: http://www.popcouncil.org**.

Equal Opportunity Employer/Affirmative Action/Minorities/Females.

POSTDOCTORAL POSITION at the Department of Human Genetics, University of Utah, available immediately to study three neural protocadherin clusters (see *Cell* **97**:779, 1999; *Mol. Cell* **10**:21, 2002). Recent Ph.D.s with strong background in genetics, biochemistry, or neuroscience are encouraged to apply. Please send curriculum vitae and three reference contacts to: **Dr. Qiang Wu, Department of Human Genetics, 15N 2030E, Salt Lake City, UT 84112. E-mail: qwu@genetics.utah.edu**.

MAYO CLINIC

POSTDOCTORAL FELLOW
Genetic Instability Research
Rochester, Minnesota, U.S.A

A postdoctoral position is available to study chromosomal instability mechanisms in human cancer. Ongoing studies focus on the mitotic checkpoint, a molecular network that helps to ensure faithful segregation of duplicated chromosomes during mitosis. Our studies utilize gene knockout mouse technology, general biochemical and molecular techniques, gene expression microarrays and light, electron and confocal microscopy. Scientists who have recently received a Ph.D. degree with experience in cell and molecular biology, biochemistry, and mouse work are encouraged to apply.

Salary will be determined by the successful candidate's experience. There is an attractive benefit package. Mayo Clinic 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/**.

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

Jan van Deursen, Ph.D.
Associate Professor
Biochemistry and Molecular Biology
Guggenheim 10
200 First Street SW
Rochester, MN 55905
507-284-2524/507-266-0340
vandeursen@mayo.edu

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

The **UCSF Center for the Neurobiology of Digestive Disease**, a joint endeavor between the Departments of Surgery and Physiology, and the Program in Biological Sciences (PIBS) and the Neurosciences Graduate Program invite applications or nominations for up to three faculty positions at the level of Assistant, Associate or Professor in Residence.

The Center is a new initiative at the University of California, San Francisco with the mission to acquire knowledge about the molecular, cellular and physiological processes that control gastrointestinal function and to translate this knowledge into the treatment of disease. The Center provides a stimulating and multi-disciplinary environment with close interactions among basic and clinical scientists.

The principal research focus is on neural regulation of gastrointestinal and pancreatic function and on the contribution of the nervous system to disorders of secretion and motility, inflammation and pain.

We will appoint outstanding scientists with research interests including but not limited to the enteric nervous system and its development, gut hormones, brain-gut interactions, visceral sensation and pain, neuro-immune interactions, and control of food intake.

Appointments will be made in the appropriate basic or clinical departments and in the Graduate Programs in Biomedical Science or Neuroscience. The level of appointment will be commensurate with experience.

Candidates should have: (1) a Ph.D. or M.D. degree or equivalent; (2) an excellent record of and potential for scholarly activity, publications and funding; and (3) a commitment to medical and graduate education.

Applicants should send a curriculum vitae, a statement of their research interests, and arrange for three letters of recommendation to be sent to: **Nigel Bunnett, Head of Search Committee, University of California, San Francisco, 521 Parnassus Avenue, Box 0660, San Francisco, CA 94143-0660**. The position will be open until filled.

The University of California, San Francisco is an Equal Opportunity/ Affirmative Action Employer. The University undertakes Affirmative Action to assure Equal Employment opportunities for under utilized minorities and women, for persons with disabilities, and for Vietnam-era veterans and special disabled veterans.

GRANTS

ANNOUNCEMENT OF REQUEST FOR PROPOSALS (RFP): N01-CN-25026-76 PRECLINICAL *IN VITRO* AND *IN VIVO* SCREENING ASSAYS FOR CANCER PREVENTIVE AGENT DEVELOPMENT
National Cancer Institute

The Division of Cancer Prevention (DCP), National Cancer Institute (NCI) is seeking proposals from qualified organizations who have the ability to screen potential cancer preventive agents in a variety of *in vitro* and short-term *in vivo* assays and to establish the infrastructures composed of one or more collaborating institutions that will conduct these screening assays. The assays will assess the potential of various agents to inhibit, reverse, or delay the early process of carcinogenesis by evaluating the biologic effects of these agents on a variety of endpoints, such as for example, on specific molecular targets; on processes involved in the development and maintenance of carcinogenesis, *e.g.,* transformation, proliferation, and apoptosis; and on validating new assays and techniques, such as quantitative image analysis. For the *in vivo* tests a required endpoint shall be the histopathologic evaluation of cancers.

Application due date is **November 13, 2002**.

See the following website: **http://rcb.nci.nih.gov** under Current Requests for Proposals

GMP | GENETICS, INC.

SCIENTISTS

GMP Genetics, Inc., is a new genetics company focused on deploying cutting-edge technologies to revolutionize human genetics. We are currently recruiting two Scientists to work in our molecular genetics laboratory located in Waltham, Massachusetts. As a Scientist, you would be joining a dynamic research team focused on the development and implementation of genetic diagnostic applications. You will be responsible for developing, testing, and implementing new and/or improved processes and applications in molecular diagnostics and leading the activities of research technicians. Qualified candidates will have a Ph.D. in genetics or related field with a minimum of three years of postdoctoral or industrial experience working in a molecular genetics or biology field and a proven track record in experimental design and data analysis. Articulate communication skills (both verbal and written) and proficient MicroSoft office skills are all required. We offer a state-of-the-art laboratory, competitive salary with stock options, health insurance, a retirement plan, and 20 days of paid time off per year. For consideration, please e-mail your résumé to: **resumes@gmpcompanies.com**. For more information, go to **websites: http://gmpgenetics.com** or **http://gmpcompanies.com**. Local candidates preferred and no telephone calls, please. *Equal Opportunity Employer.*

RESEARCH METEOROLOGIST/ RESEARCH HYDROLOGIST
Department of Agriculture (USDA)
Agriculture Research Service (ARS)

The U.S. Department of Agriculture, Agriculture Research Service, Northwest Watershed Research Center, Boise, Idaho, invites applications for the position of Research Hydrologist/Research Meteorologist, GS 12/13; salary is $54,275 to $83,902 (commensurate with experience). The incumbent will develop and test new hypotheses and concepts for measuring and distributing weather elements over complex topography for implementation in hydrologic and rangeland resource models. Objectives are to develop measurement methodologies and mathematical, statistical, and modeling techniques for describing the temporal and spatial distribution of precipitation and other climatic elements in mountainous watersheds. Also, incumbent may develop models and analysis tools to assess the impact of weather and climate variability on snowmelt, stream discharge, and water quality parameters such as steam temperature and suspended sediment. A Ph.D. in meteorology, engineering, or other physical or natural sciences is desirable. *Must be a U.S. citizen.* For more information on research program and/or position, contact: **Dr. Gerald Flerchinger; Telephone: 208-422-0716; e-mail: gflerchi@nwrc.ars.usda.gov**. The vacancy announcement and application forms can be obtained through the **website: http://www.afm.ars.usda.gov/divisions/hrd/vacancy/resjobs/X2W-2410.HTM** or by contacting: **Kathy Wudyka; Telephone: 208-422-0703.** Applications must be postmarked by September 30, 2002. *USDA is an Equal Opportunity Provider and Employer.*

GEOMICROBIOLOGIST. A **RESEARCH SCIENTIST** position is available for studies of bacterial Fe(III) oxide and uranium(VI) reduction in subsurface sediments. Ph.D. in geomicrobiology, biogeochemistry, or environmental engineering is required. Experience in chemical analysis of aqueous and solid-phase sediment materials and application of molecular tools in microbial ecology is desirable. Send curriculum vitae and names and addresses of three references to: **Eric E. Roden, The University of Alabama, Department of Biological Science, Box 870206, Tuscaloosa, AL 35487. E-mail: eroden@bsc.as.ua.edu**. *The University of Alabama is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FACULTY POSITION
Microbial Bioinformatics

The Research Institute for Children and Department of Computer Science at The University of New Orleans are seeking a **TENURE-TRACK FACULTY MEMBER** with interest and expertise in microbial bioinformatics, e.g., comparative genomics, gene expression, or prediction of gene function. Applicants should have a Doctoral degree in computer science or related discipline and expertise in microbiology. The Research Institute for Children is a newly established, well-funded academic collaboration. A 60,000-square-foot, state-of-the-art research building was opened this year. The research focus is host-pathogen interactions. The University of New Orleans is an urban public university and a member of the LSU system. The Computer Science Department has undergraduate and M.S. students and participates in a multidisciplinary doctoral program. A very competitive recruitment package includes salary and ongoing research funds.

Inquiries should be directed to: **Director of the Research Institute for Children, Seth Pincus, M.D.; Telephone: 504-894-5376; e-mail: spincus@chnola-research.org** or to: **Chair of the Department of Computer Science, Mahdi Abdelguerfi, Ph.D.; Telephone: 504-280-7107; e-mail: mahdi@cs.uno.edu**. Complete applications consisting of curriculum vitae, statement of research goals, and a list of three references should be submitted to: **Search Committee, Department of Computer Science, University of New Orleans, New Orleans, LA 70148. E-mail: search@cs.uno.edu**. *The University of New Orleans is an Equal Opportunity/Affirmative Action Employer. Women and minorities are especially encouraged to apply.*

POSTDOCTORAL ASSOCIATES
University of Miami/ School of Medicine
Sylvester Comprehensive Cancer Center

Postdoctoral Associate positions (two) are available to study transcriptional regulation at the Sylvester Comprehensive Cancer Center/University of Miami. Selected candidates will work on molecular mechanisms of silencing of tumor-suppressor genes in prostate cancer. Candidates may also participate in ongoing translational studies in the laboratory. Ph.D. in biological sciences required. Experience in molecular biology is required. Knowledge of microarray or proteomic techniques would be an advantage but not essential. Salary and benefits are competitive. Interested individuals should send their curriculum vitae including addresses of three references to:

Dr. Rakesh Singal
Associate Professor of Medicine
Sylvester Comprehensive Cancer Center
Room 100 Fox Research Building
P.O. Box 019132 (MB77)
University of Miami School of Medicine
Miami, FL 33136
FAX: 305-243-5555
E-mail: rakeshsingal@hotmail.com

FDA POSTDOCTORAL RESEARCH: FDA's Center for Drug Evaluation and Research has a Postdoctoral opening to do research on performance of *in vivo* and *in vitro* nonclinical studies that target the discovery, mechanistic link, development, and performance evaluation of biomarkers of drug-induced tissue injury that predict toxicity, particularly in the hepatic and cardiovascular systems. The assignment is in the Washington, D.C. area. For additional information, see **website: http://www.orau.gov/orise/edu/pdocneeds.htm**. Send a résumé to **e-mail: warrens@orau.gov; FAX: 865-241-5219**. Reference Project Number FDA 2002-01.

POSITIONS OPEN

POSTDOCTORAL POSITION
National Cancer Institute
Cytokine Molecular Mechanisms Section

Three- to five-year Postdoctoral Fellowship available immediately. Candidate (M.D. or Ph.D. required) will have training in most aspects of molecular biology and biochemistry with a working knowledge of DNA repair, DNA methylation, and gene transcription. Candidate is expected to provide leadership and independence in cancer cell apoptosis models. Good English writing and speaking skills are preferred. Contact name: **William Farrar; Telephone: 301-846-1503; e-mail: farrar@ncifcrf.gov**.

Department of Health and Human Services and NIH are Equal Opportunity Employers.

FACULTY POSITIONS in organic chemistry. The Department of Chemistry at Washington University in St. Louis, Missouri, invites applications for two tenure-track faculty positions at the **ASSISTANT PROFESSOR** level to begin in September 2003. Both positions are in the area of organic chemistry (broadly defined) including but not limited to bioorganic, materials/polymer, physical organic, and synthetic organic chemistry. The positions will require the development and maintenance of outstanding research programs and the teaching of core chemistry courses at the undergraduate and graduate levels.

The applications should consist of curriculum vitae and a concise research proposal or proposals. These documents are to be submitted in electronic form as PDF (portable document format) files to **e-mail: search@wuchem.wustl.edu**. Applicants should also arrange for three letters of reference to be sent to **e-mail: search@wuchem.wustl.edu** with signed originals sent to:

Faculty Search Committee
Department of Chemistry
Campus Box 1134
Washington University
One Brookings Drive
St. Louis, MO 63130-4899
FAX: 314-935-4481

Completed applications must be received by 15 October 2002 to ensure inclusion in the initial review. However, late applications will be accepted until the positions are filled. Applications for senior-level positions in any field of chemistry will be considered at any time and no format is specified.

Washington University is an Equal Opportunity/Affirmative Action Employer. Individuals from underrepresented groups are especially encouraged to apply.

POSTDOCTORAL FELLOW
Microbial Cellular Networks

Two Postdoctoral positions are available to join an interdisciplinary research group working to elucidate the architecture and dynamics of cellular networks in *Escherichia coli*. Large-scale technologies such as DNA microarrays are used to make genomewide observations of cellular states. Computational and mathematical approaches are then employed to analyze such data in order to model the genetic circuitry of the organism and to develop functional predictions for prospective experimental analysis. For background, see, e.g., *Nature* **407**:651; *Nature* **411**:41; *Nature Genet.* **29**:54.

Candidates with Ph.D. or equivalent with demonstrated track record in bacterial molecular biology and genetics are sought. Interested applicants should send their curriculum vitae and three references to:

Dr. Zoltan Oltvai
Department of Pathology
Northwestern University
Chicago, IL 60611
E-mail: zno008@nwu.edu

Invitrogen Corporation,

headquartered in Carlsbad, California, is a recognized leader in the fast-paced biotech industry. This dynamic company develops, manufactures and markets research tools in kit form and provides other research products and services to biotechnology and biopharmaceutical researchers and companies worldwide.

With operations across the country and around the world, Invitrogen is uniquely positioned for leadership, with a corporate culture that invites innovation and excellence.

We currently have a variety of opportunities. Please visit our Web site for more information at:

www.invitrogen.com

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life technologies

EOE M/F/D/V.

Georgia State University

Tenure-Track Faculty Position in Behavioral Neuroscience

Georgia State University is engaged in a major expansion of its research and instructional programs in Behavioral Neuroscience as part of the recently launched NSF Science and Technology Center for Behavioral Neuroscience. Generous state and institutional funds along with $20 million dollars from the National Science Foundation has been committee to fund the Center for the first five years. The Center is a consortium of more than 60 neuroscientists from Georgia State and other Atlanta area universities including the Atlanta University Center, Emory University, Georgia Tech. and Morehouse Medical School. The purpose of the Center is to foster interdisciplinary collaborative approaches towards understanding the basic neural mechanisms underlying the regulation of complex social behaviors and emotions. The Center is also designed to enhance minority participation in science, to encourage technology transfer to industry, and to aid in bringing research findings to the public.

The Department of Biology at Georgia State University invites applications for a tenure-track position in Behavioral Neuroscience. We are particularly interested in individuals who employ *molecular and cellular approaches* to the study of how *neurochemical signals* regulate *behavior*. The successful candidate appointed at the Assistant Professor level will be expected to establish a vigorous, independent, externally-funded research program. The faculty member will also participate in instruction in areas such as comparative physiology and behavior.

The Biology Department has a large and active research faculty, outstanding research and core facilities, and M.S. and Ph.D. training programs (see **http://biology.gsu.edu/**). Our expanding program in neuroscience research (see **http://biology.gsu.edu/neurosci/**).

Applicants should include a CV, reprints of recent papers, the names and contact information for at least three references, and a statement of future research plans.

Send application to:

Dr. H. Elliott Albers
Chair of the Behavioral Neuroscience Search Committee
Georgia State University
33 Gilmer St SE Unit 8
MSC 8LO389
Atlanta GA 30303-3088

Georgia State University, a Research University of the University System of Georgia, as an Equal Opportunity Employer.

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The search stops here.

career advice
e-mail job alerts
graduate programs
job postings

www.sciencecareers.org

University of California San Diego

Faculty Position
University of California at San Diego
Division of Biological Sciences
Center for Molecular Genetics

The Division of Biological Sciences at the University of California, San Diego is seeking an outstanding individual with a strong research program in basic molecular mechanisms of particular relevance to understanding human disease. This individual would have a broad interest in molecular genetics and complement existing strengths on the UCSD campus in human and model organism genetics, as well as cellular, developmental, and molecular biology. The primary criteria for selection will be research excellence and potential. All candidates must have a Ph.D., M.D., or an equivalent degree. The successful candidate will be a regular UCSD faculty member and will be expected to participate in the undergraduate and graduate teaching curriculum at UCSD. Applicants seeking appointment at the level of associate or full professor are encouraged to apply, although outstanding candidates that are more junior will be also considered. The level of appointment will be commensurate with qualifications and experience with salary based on University of California pay scale.

Complete applications received by **November 15, 2002** will be assured of consideration. Applicants should submit a curriculum vitae, a complete list of publications, a short statement of research interests and scientific goals, and three letters of recommendation (forwarded separately) to:

Molecular Genetics Search Committee
Division of Biological Sciences
Attention: Sandra Brierley – 0346-A
University of California, San Diego
9500 Gilman Drive
La Jolla, CA 92093-0346

UCSD is an Equal Opportunity-Affirmative Action Employer with a strong institutional commitment to the achievement of diversity among its faculty and staff.

POSITIONS OPEN

LA JOLLA INSTITUTE FOR ALLERGY AND IMMUNOLOGY

POSTDOCTORAL POSITION to study the biochemistry of immune recognition by T lymphocytes. NIH-funded projects include analysis of the CD1-dependent recognition of glycolipids by NKT cells (**Sidobre et al.,** *Journal of Immunology*, **169:**1340, 2002) and the interaction of nonclassical Class I molecules with CD8 molecules (**Leishman et al.,** *Science* **294:**1936, 2001). We are seeking a trained Biochemist interested in problems at the forefront of immunology research. Experience in large-scale protein production, protein refolding from inclusion bodies, surface plasmon resonance measurements of molecular interactions, and/or other biochemical methods strongly preferred. Applications including curriculum vitae and the names of three references should be sent to:

Mitchell Kronenberg, Ph.D.
Member and Division Head
Developmental Immunology
La Jolla Institute for Allergy and Immunology
10355 Science Center Drive
San Diego, CA 92121
E-mail: mitch@liai.org

PHYSIOLOGICAL GENOMICS OF PREGNANCY

NIH-funded **POSTDOCTORAL POSITIONS** are available to study molecular mechanisms and signaling events involved in the establishment and maintenance of pregnancy including investigations on the prolactin gene family, intrauterine inflammatory cells, uterine vasculature, and the growth and differentiation of decidual and trophoblast cells. Molecular dissection of signaling pathways will involve *in vitro*, gene targeting, and physiologic genomic approaches. Applicants should have a Ph.D. and/or M.D. degree and experience in molecular biology, cell biology, biochemistry, or a related area and a strong work ethic and commitment to become an independent Scientist. Competitive salaries will be negotiable and are dependent upon experience. Application review begins immediately and will continue until the positions are filled. Please send curriculum vitae, a letter outlining research experience and career goals, and names and addresses of three references to: **Dr. Michael J. Soares, Department of Molecular and Integrative Physiology, University of Kansas Medical Center, 3901 Rainbow Boulevard, Kansas City, KS 66160. E-mail: msoares@kumc.edu.** *The University of Kansas Medical Center is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIP: hepatitis C and RNA binding proteins. Opening to study HCV/host interactions in disease pathogenesis, HCV polymerase, or RNA binding proteins. Interdisciplinary studies with the Emory Vaccine Center and The Winship Cancer Center. Salary and benefits competitive. Send curriculum vitae and references to: **Dr. Curt H. Hagedorn, Whitehead Research Building, Suite 201, 615 Michael Street, Emory University School of Medicine, Atlanta, GA 30322. E-mail: chagedo@emory.edu; FAX: 404-712-2980.** *Emory University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION in microbiology/molecular biology immediately available for research on multiplasmid genome: sequencing and annotation of three large plasmids. Experience with gram positives and/or plasmids preferred. Submit letter, curriculum vitae, and three references to: **Dr. Patricia Vary, Biological Sciences, Northern Illinois University, DeKalb, IL 60115 U.S.A. E-mail: pvary@niu.edu.** Review of complete applications will begin September 1, 2002, and continue until position is filled. *Affirmative Action/Equal Employment Opportunity.*

POSITIONS OPEN

NMR SPECTROSCOPY
The University of Wisconsin

The National Magnetic Resonance Facility at Madison, one of the premier NMR research laboratories in the world, is expanding to nine spectrometers including 500, 600, 750, 800, and 900 MHz systems with cryogenic probes. NMRFAM is an ideal location to pursue all aspects of NMR and to develop productive collaborations with leading Scientists from around the country. Multiple openings exist at **POSTDOCTORAL** and **ACADEMIC STAFF** levels. For details, visit **website: http://www.nmrfam.wisc.edu/Help/jobs.html.**

The Center for Eukaryotic Structural Genomics, funded as a pilot project in the NIH Protein Structure Initiative, is developing critical technologies for high-throughput determination of protein structures. Ph.D.-level academic staff positions at CESG (in Madison and Milwaukee, Wisconsin) provide unique opportunities for NMR Spectroscopists to make fundamental contributions to the new fields of structural and functional genomics. For details, visit **website: http://www.uwstructuralgenomics.org/jobs.htm.**

Please direct questions to: **Dr. Craig Newman; e-mail: admin@nmrfam.wisc.edu.** *The University of Wisconsin–Madison is an Equal Opportunity/Affirmative Action Employer and especially encourages women and minorities to apply. Unless confidentiality is requested in writing, information regarding applicants must be released upon request. Finalists cannot be guaranteed confidentiality.*

MOLECULAR PHYSIOLOGIST
Heart Muscle in Heart Failure

POSTDOCTORAL POSITIONS are available immediately at junior/senior faculty levels for motivated M.D. or Ph.D. applicants committed to molecular and cellular studies of the heart. Our work examines molecular signaling and the molecular basis of arrhythmogenesis, calcium sparks and transients, membrane currents, phosphatase behavior, macromolecular complexes, anchoring proteins, cytoskeleton, and contractile dysfunction in heart failure. This is a broad learning opportunity in a multidisciplinary research group at the University of Maryland Medical School and the Medical Biotechnology Center, funded through an NIH muscle training program and an NIH program project grant in heart failure. Background in cellular physiology, molecular biology, patch clamp experiments, transgenic animals, and functional genomics will be considered favorably. Interested applicants can examine our **websites: Yibin Wang (http://physiology.umaryland.edu/faculty/ywang/index.asp), Terry Rogers (http://neuroscience.umaryland.edu/faculty.asp?FacultyID=37),** and **W.J. Lederer (http://www.umbi.umd.edu/~mbc/pages/lederer.htm).** To apply, send (1) a letter of application, (2) up-to-date curriculum vitae, (3) statement of long-term goals, and (4) three references to **e-mail: trogers@som.umaryland.edu; FAX: 410-510-1931.**

POSTDOCTORAL POSITIONS

Immediate Postdoctoral positions are available for highly motivated individuals to study the mitotic and other novel functions of Pak1 (using *in vitro* and animal models) and to investigate on the roles of estrogen receptor coregulators (using knockout and transgenic models). Candidates should have a Ph.D. in cell biology/biochemistry and strong documented publication in these areas. Opportunity exists to grow to junior faculty positions. Salary is highly competitive and commensurate with experience. For immediate consideration, send curriculum vitae and names of three references to: **Rakesh Kumar, Professor, The University of Texas M. D. Anderson Cancer Center–108, 1515 Holcombe Boulevard, Houston, TX 77030-4095. E-mail: rkumar@mdanderson.org.**

University of Texas M.D. Anderson Cancer Center is an Equal Opportunity Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

The University of Washington School of Medicine and the VA Puget Sound Health Care System in Seattle, Washington, have funded **POSTDOCTORAL POSITIONS** to study the functions of leukemia and sarcoma fusion proteins. Candidates should have a Ph.D. or M.D. degree and experience in molecular and cellular biology. Interested candidates should send a cover letter, résumé, and contact information for three references to: **Howard A. Chansky, M.D., Mail Stop ORT112, 1660 South Columbian Way, Seattle, WA 98108.** *Equal Opportunity Employer. U.S. citizenship is required.*

NIH-funded **POSTDOCTORAL POSITION** is available to study Kaposi's sarcoma-associated herpesvirus (KSHV/HHV8)-related pathogenesis. Selected Fellow will use comprehensive genetic, molecular, cellular, and biochemical approaches to examine the mechanism by which KSHV causes malignant transformation. Successful candidates must hold Ph.D./M.D. in virology or related fields. Preference will be given to motivated individuals who possess expertise in angiogenesis, cell cycle, signal transduction, gene regulation, microarray, proteomics, and animal model. Interested individuals should send a cover letter together with curriculum vitae and names of three references to: **Dr. S.-J. Gao, Tumor Virology and Immunology Program, Children's Cancer Research Center, MED528L, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78229-3900, MC–7810. E-mail: gaos@uthscsa.edu.** *UTHSCSA is an Equal Employment Opportunity/Affirmative Action Employer.*

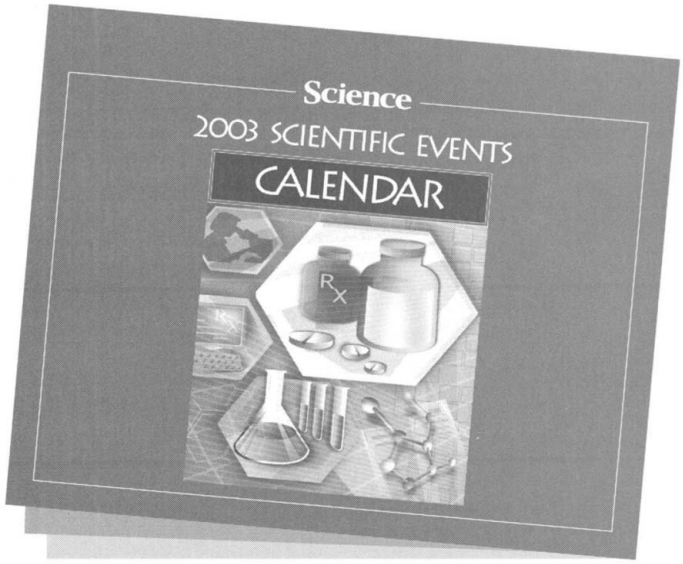
POSTDOCTRAL FELLOWSHIPS
CELL SURVIVAL

Postdoctoral positions available to study the molecular mechanisms involved in stress signaling, up-regulation of survival factors, and transcription of stress-associated genes. An applicant with a recent Ph.D. or an equivalent degree and experience in molecular biology, biochemistry, and/or microbiology is encouraged to apply. Send résumé and three references to: **Toshimichi Shinohara, Ph.D., Professor, University of Nebraska Medical Center, 985145, Nebraska Medical Center, Omaha, NE 68198-5145. Telephone: 402-559-4205; e-mail: tshinohara@unmc.edu.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS

Postdoctoral positions are available to investigate polymeric systems (nanoparticles, micelles, and gel systems) for drug/gene/protein delivery and imaging applications. Candidates with interest in the above areas are encouraged to apply with curriculum vitae and names of three references to: **Vinod Labhasetwar, Ph.D., Associate Professor, Department of Pharmaceutical Sciences, 986025 Nebraska Medical Center, Omaha, NE 68198-6025 U.S.A. E-mail: vlabhase@unmc.edu.** The research interest of Dr. Labhasetwar's laboratory can be found at **website: http://www.unmc.edu/pharmacy/pharmsciences/facultybio.htm.**

A **POSTDOCTORAL POSITION** is available immediately for a recent Ph.D. in cell/molecular biology or genetics to study antiestrogen regulation of macrophage function in the breast tumor environment. Expertise in basic molecular biology techniques is essential; experience with cell culture, apoptosis assays, and RNA phenotyping in relation to leukocyte biology or breast cancer is highly desirable. Please send curriculum vitae, brief summary of research experience and career goals, and names and addresses of three references to: **Dr. Theodore A. Bremner, Howard University Cancer Center, 2041 Georgia Avenue, N.W., Washington, DC 20060. E-mail: tbremner@howard.edu.** *Howard University is an Equal Opportunity Employer.*



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For full details contact:

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fax ..... +44 (0) 1223 326 532
e-mail ..... rwalters@science-int.co.uk

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POSITIONS OPEN

POSTDOCTORAL POSITION AVAILABLE

The Laboratory of Molecular Microbiology seeks a **POSTDOCTORAL FELLOW** (M.D./D.V.M. and/or Ph.D.) with a background in molecular virology who has a particular interest in either AIDS vaccine development or pathogenesis. The laboratory uses simian immunodeficiency virus (SIV) infection of monkeys as a model for human AIDS. Vaccine studies focus on the use of live viral vectors to express SIV proteins and study of correlates of immunity. Pathogenesis studies involve the virology and immunology of asymptomatic infection of the natural host species of SIV, African green monkeys. Studies would involve assessment of viral evolution, target cells using confocal microscopy, and viral load and distribution and immunologic responses in naturally and experimentally infected African green monkeys. The applicant should have experience in molecular virology, cellular immunology, or comparative pathology. The position is available immediately for a duration of two to five years. Starting salary is dependent on qualifications. Applicants are requested to submit curriculum vitae and three letters of reference to: **Dr. Vanessa Hirsch, Laboratory of Molecular Microbiology, NIAID Twinbrook II Facility, 12441 Parklawn Drive, Rockville, MD 20852 U.S.A. E-mail: vhirsch@niaid.nih.gov**. *NIH is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION in physiology. A Research Associate is needed to conduct magnetic resonance imaging (MRI) of the rodent upper airway while various upper-airway muscles are stimulated. Candidates with experience in imaging technology, neurophysiology, and/or small animal surgery will be given preference. Review of materials to begin September 9, 2002, and will continue until position is filled. Applicants with a Ph.D. and/or M.D. or equivalent should send curriculum vitae and the names of three references to: **Ralph Fregosi, Ph.D., Reference Job Number 992653, Department of Physiology, University of Arizona, Tucson, AZ 85724-5051**. Please see **website: http://www.hr.arizona.edu** for more information about this position. *The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer; Minorities/Women/Disabled/Veterans.*

POSTDOCTORAL POSITION is available immediately to study (1) functional interactions of the herpes simplex virus (HSV) nuclear phosphoprotein UL3 and/or (2) viral neuropathogenesis. A Ph.D. and expertise in either (1) biochemistry or molecular biology or (2) neurobiology, cell biology, virology, or immunology are required. Salary based on relevant experience and education. *Non-U.S.A. citizens must be eligible for a three-year J−1 training visa.* The Laboratory of Immunology and Virology, FDA/CBER, is located on the NIH campus in Bethesda, Maryland. Send cover letter, curriculum vitae, summary of past work, and contact information for three references to: **Nancy S. Markovitz, Ph.D., FDA/CBER Division of Cellular and Gene Therapies, 1401 Rockville Pike, HFM−518, Rockville, MD 20852. E-mail: markovitzn@cber.fda.gov**.

POSTDOCTORAL POSITION to study fungal pathogenesis. This is an excellent opportunity to learn about human pathogenic fungi with a multidisciplinary group. Ph.D. in any area of biology. Molecular biology training and research publications in English are required. Submit curriculum vitae, a statement of interest, and names of references to: **Dr. V. Chaturvedi, Mycology Laboratory, Wadsworth Center, Albany, NY 12201-2002. E-mail: vishnu@wadsworth.org**.

BIOELECTRICITY LABORATORY
Harvard Medical School

The Laboratory seeks a **POSTDOCTORAL FELLOW** to study the transcriptional regulation of cardiac potassium channel genes. Please send curriculum vitae to: **Gideon Koren, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115. E-mail: koren@calvin.bwh.harvard.edu; website: http://bioelectricity-lab.bwh.harvard.edu**.

POSITIONS OPEN

THE SALK INSTITUTE

A POSTDOCTORAL POSITION is available at The Salk Institute to study the basis of cell-size control by the retinoblastoma tumor suppressor pathway in the unicellular green alga *Chlamydomonas reinhardtii*. Our laboratory combines the powerful haploid genetics of *Chlamydomonas* with biochemistry and molecular genetics to understand how cells coordinate growth and division. Diverse projects are available but a major focus is how the RB protein is regulated posttranslationally in response to cell size.

Applicants should send curriculum vitae, contact information for three references, and a brief description of their interests to:

Jim Umen
Assistant Professor
Plant Biology Laboratory
The Salk Institute for Biological Studies
10010 North Torrey Pines Road
La Jolla, CA 92037 U.S.A.
E-mail: umen@salk.edu

The Salk Institute is an Equal Opportunity Employer.

The Human Hookworm Vaccine Initiative is seeking both a **POSTDOCTORAL SCIENTIST** and a **RESEARCH TECHNICIAN** to express candidate vaccine antigens in yeast. Both candidates should have a strong background in protein production in *Pichia* and/or *Saccharomyces*. As well, a working knowledge of fermentor technology would be a distinct advantage. Both positions require highly motivated and independent Researchers. The Postdoctoral Scientist should have a Ph.D. and at least two years of experience in fermentation and be able to lead a small group of Scientists. The Technician should have at least two years of experience in fermentation and protein production. Both positions are funded for three years with an initial six-month probationary period. Search to commence 17 September 2002 and continue until positions are filled. Please send curriculum vitae and two professional references to: **Dr. Alex Loukas, Department of Microbiology and Tropical Medicine, Ross Hall, Room 726, George Washington University Medical Center, 2300 Eye Street N.W., Washington, DC 20037. E-mail: mtmacl@gwumc.edu**. *The George Washington University is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION

To work on a project aimed at discovering the basis for cell-cell signaling in symbiotic uncultivable bacteria. The project builds on a novel approach to grow previously uncultivated microorganisms (*Science* **296:** 1127–1129, 2002). Applicants must have a Ph.D. in chemistry or related fields and a strong background in natural product chemistry. Position available immediately. Please e-mail curriculum vitae and names of three references to: **Kim Lewis, Department of Biology, Northeastern University, Boston, MA 02115. E-mail: k.lewis@neu.edu; website: http://www.biology.neu.edu/lewis.html**.

POSTDOCTORAL POSITIONS to develop nonviral targeted gene delivery systems. One position is for a Bioanalytical Chemist familiar with HPLC, LC-MS, peptide synthesis, and bioconjugate chemistry. A second is for a Molecular Biologist interested in developing and testing new gene constructs. Candidates should send their curriculum vitae to **e-mail: kevin-rice@uiowa.edu. Division of Medicinal and Natural Products Chemistry, College of Pharmacy, University of Iowa, Iowa City, IA 52242**.

POSITIONS OPEN

A POSTDOCTORAL POSITION in microbial pathogenesis is available to investigate virulence mechanisms of *Haemophilus ducreyi*, the etiologic agent of chancroid. Emphasis will be placed on the identification and characterization of *H. ducreyi* gene products involved in the regulation of expression of virulence factors including the LspA1 and LspA2 proteins. Experience with recombinant DNA techniques is required; this project will use microarray and mutant analyses in conjunction with a relevant animal model. Position includes salary, fringe benefits, and the opportunity to work in a dynamic research environment. Position available immediately. Send curriculum vitae and the names and telephone numbers of three references to: **Dr. Eric J. Hansen, Department of Microbiology, the University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75390-9048. FAX: 214-648-5905; e-mail: eric.hansen@utsouthwestern.edu**. *UT Southwestern is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION
University of California, San Francisco

Applications are invited for a Postdoctoral Fellow to study molecular mechanisms of asthma pathogenesis. We use transgenic models and DNA microarray technology to study how T cell cytokines induce asthma by acting on resident cells in the lung (see *Nature Medicine* **8:**885). Motivated candidates with recent Ph.D. or M.D. and strong background in immunology and molecular biology are encouraged to apply. Send cover letter, curriculum vitae, summary of past work, and three references to: **David J. Erle, M.D., Lung Biology Center, UCSF, Box 0854, San Francisco, CA 94143-0854 U.S.A. E-mail: erle@itsa.ucsf.edu**. *UCSF is an Affirmative Action/Equal Opportunity Employer. The University undertakes Affirmative Action to assure Equal Employment Opportunity for underutilized minorities and women, for persons with disabilities, and for Vietnam-era veterans and special disabled veterans.*

POSTDOCTORAL RESEARCHER position available in the Department of Microbiology, Immunology, and Parasitology at Louisiana State University Health Sciences Center. Preference will be given to an individual with background in immunology of infectious diseases. Must have Ph.D. or an equivalent degree recognized in United States with working experience in immunological techniques, T cell culture, cytokine assay, and FACS analysis. The individual should have good communications skills and be able to work independently. Salary dependent on experience. Interested parties should send résumé/curriculum vitae to: **Dr. Imtiaz Khan, Microbiology, LSU Health Sciences Center, Box P6-1, 1901 Perdido Street, New Orleans, LA 70112**. *LSUHSC is an Equal Employment Opportunity/Affirmative Action Employer.*

Full-time **POSTDOCTORAL RESEARCH POSITION**: angiogenesis and vascular biology laboratory (**Roberto Nicosia, M.D., Ph.D., Principal Investigator**) seeks applicants with expertise in molecular and cell biology to study mechanisms of blood vessel growth and survival. Knowledge of proteomics, DNA array technology, and *in vivo* transgenic studies desirable. Position requires a Ph.D. plus zero to three years of laboratory research experience. Competitive salary plus benefits. Send curriculum vitae to: **Eric Fogel, Mailstop S−151, 1660 South Columbian Way, Seattle, WA 98108. E-mail: fogel.eric@seattle.va.gov**. *Equal Opportunity Employer.*

POSTDOCTORAL POSITION

To work on an NSF-funded project to discover novel microorganisms in marine environment. The project builds on a new approach to growing previously uncultivated microorganisms (*Science* **296:**1127−1129, 2002). Applicants must have a strong background in general microbiology. Position is available immediately. Please e-mail curriculum vitae and names of three references to: **Slava Epstein, Department of Biology, Northeastern University, Boston, MA 02115. E-mail: s.epstein@neu.edu**.

POSITIONS OPEN

POSTDOCTORAL RESEARCH FELLOW. A Postdoctoral Fellowship is available at the Nora Eccles Harrison Cardiovascular Research and Training Institute at the University of Utah. Candidates must hold M.D. and/or Ph.D. degrees in bioengineering, physiology, or related fields and have interests in experimental and theoretical whole organ cardiac electrophysiology. The candidate will collaborate with an interdisciplinary team of Scientists with expertise in cardiac electrophysiology, signal processing, scientific visualization, and computer science. Research and training will include the study of cardiac potential fields and electrocardiographic signals obtained from experimental animals and computer models. It will focus on fundamental aspects of three-dimensional, anisotropic excitation and repolarization in both normal hearts and in animal models of heart disease (myocardial infarction, conduction disturbances, ischemia, reentrant arrhythmias). Newer research programs are aimed at studying the electrical activity of the heart of transgenic mice. The primary research tool will be high-resolution electrocardiographic and optical mapping and associated methods for analyzing and visualizing the recorded signals. More information about the CVRTI Institute can be found at **website: http://www.cvrti.utah.edu/**.

Interested applicants should send a letter of interest and curriculum vitae to: **Dr. Bruno Taccardi, Nora Eccles Harrison CVRTI, University of Utah, 95 South 2000 East, Salt Lake City, UT 84112-5000. E-mail: taccardi@cvrti.utah.edu**.

The University of Utah is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities and provides reasonable accommodations to the disabilities of applicants and employees.

POSTDOCTORAL RESEARCH POSITIONS. University of Wisconsin–Madison Medical School Psychiatry Department. Two Postdoctoral positions available in **Dr. Ned Kalin's** laboratory. Doctoral degree required with emphasis in neuropharmacology, behavioral neuroscience, and/or molecular neuroscience. Requires strong oral and written communication skills. This individual will investigate the mechanisms underlying behavioral and biochemical changes associated with stress, fear, and anxiety. The laboratory is especially interested in the underlying neural circuitry and molecular mechanisms. Salary range begins at $31,092. Please send a letter of interest along with your curriculum vitae to: **Dr. Ned Kalin, University of Wisconsin Department of Psychiatry, 6001 Research Park Boulevard, Madison, WI 53719**. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer. Unless confidentiality is requested in writing, information regarding the applicants must be released upon request. Finalists cannot be guaranteed confidentiality.*

2003 ASM/NCID POSTDOCTORAL RESEARCH POSITIONS IN MICROBIOLOGY

Positions are available for **POSTDOCTORAL SCIENTISTS** to conduct novel research with the overall objective of developing practical applications of microbiology, immunology, and epidemiology for diagnosis and prevention of infectious diseases. Associates will perform research in residence at the National Center for Infectious Diseases, which is headquartered at the Centers for Disease Control and Prevention in Atlanta, Georgia. Applications can only be submitted electronically. Application deadline: November 15, 2002. **Website: http://www.asmusa.org/edusrc/edu23e.htm; e-mail: fellowships-careerinformation@asmusa.org**.

POSTDOCTORAL POSITIONS available to investigate in the areas of stem cell and myogenesis with emphasis on creating genetically engineered mice. Strong background in molecular biology is essential. Contact: **Professor Lucia Schuger; e-mail: lschuger@med.wayne.edu; website: http://www.med.wayne.edu/Pathology/FACPROFILES/schuger.html**.

Wayne State University is an Equal Employment Opportunity/Affirmative Action Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION
Monell Chemical Senses Center

A Postdoctoral position is available at the Monell Chemical Senses Center to study molecular biology of taste perception. Work in this laboratory focuses on gene expression profiles for individual cells in a taste bud and the roles of differentially expressed genes among the heterogeneous taste cells in taste transduction, using bioinformatic, molecular, and biochemical techniques including single cell RT-PCR, quantitative PCR, and DNA microarray (see *Nature Neurosci.* **2**:1055–1062; *Nature Genet.* **28**:58–63).

The Monell Chemical Senses Center is a nonprofit research institute dedicated to the study of taste, smell, chemical irritation, and appetite in Philadelphia, Pennsylvania. Research at Monell contributes to a wide range of scientific and practical knowledge. With more than 50 Ph.D.-level Scientists, the Center is making major progress toward understanding how the chemical senses function and their importance in everyday life. Ongoing chemosensory studies extend from investigating receptor mechanisms to evaluating the role of the chemical senses in human health and disease (see **website: http:/www.monell.org** for additional information).

Position is available immediately. Requirements include a Ph.D. in molecular biology, biochemistry, physiology, or neuroscience. Stipend is in accordance with NIH standards. Please send a cover letter, curriculum vitae, names and addresses, telephone numbers, and e-mail addresses of three references to: **Dr. Liquan Huang, Monell Chemical Senses Center, 3500 Market Street, Philadelphia, PA 19104. E-mail: lhuang@monell.org; FAX: 215-898-2048, Attention: Dr. Huang.** *Monell is an Equal Opportunity Employer and encourages applications from women and minorities.*

A **POSTDOCTORAL POSITION** is available for an NIH-funded research project on regulatory mechanisms in bone destruction in arthritis. This project focuses on transcriptional regulation of genes involved in bone remodeling, analysis of contributing cell types, and studies of bone erosion in animal models of arthritis. Candidates must have a Ph.D. or M.D. degree. A strong background in molecular biology and/or immunology is required. Experience in promoter analysis and transfection techniques is desired. Excellent collaborative research environment including genomics core facility. Applicants should provide a cover letter, curriculum vitae, and the names of at least three references to: **Dr. E.M. Gravallese, Beth Israel Deaconess Medical Center, Harvard Institutes of Medicine, NE Baptist Bone and Joint Institute, 4 Blackfan Circle, Room 241, Boston, MA 02115. E-mail: egravall@caregroup.harvard.edu**. *BIDMC is an Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP with research interest in genetic mapping and genotype/phenotype associations. Studies include identifying polymorphisms in inflammation and growth nutrition pathways relating to cystic fibrosis. *NIH Fellowship requires U.S. citizenship or permanent residency.* Application must include curriculum vitae and names of three references with contact information. Please apply electronically to **e-mail: pbd@po.cwru.edu** or by mail to: **P. Davis, M.D., Ph.D., Case Western Reserve University School of Medicine, Department of Pediatrics, BRB Eighth Floor, 2109 Adelbert Road, Cleveland, OH 44106**. *CWRU is an Equal Opportunity/Affirmative Action Employer. Applications from women and minorities are encouraged.*

POSTDOCTORAL POSITION is available to study the proliferation capacity and radiobiology of human and murine hematopoietic stem cells. Applicants must have a recent Ph.D. degree and a strong background in cellular biology, especially extracellular markers and cell culturing. Send curriculum vitae and references to: **Professor Peter Mauch, M.D., Brigham and Women's Hospital, Department of Radiation Oncology, 75 Francis Street, ASB1, L2, Boston, MA 02115. FAX: 617-632-4115; e-mail: kalindi_parmar@dfci.harvard.edu**.

GLOBAL OPPORTUNITIES

C.R. ROPER FELLOW
Faculty of Medicine, Dentistry, and Health Sciences
The University of Melbourne

The University, recognised internationally for excellence in teaching and research, is located centrally in Melbourne, a vibrant centre of Australian intellectual and cultural life.

The position: Applications are invited for appointment as the C.R. Roper Fellow for research in either clinical or nonclinical areas. You should consult with the Head of the appropriate Department within the Faculty of Medicine, Dentistry, and Health Sciences concerning the acceptability of your research project. Evidence of the Department's acceptance must be included with the application.

The person: You should possess a Doctorate in an appropriate field of medical research and be actively conducting research in the field. The level of appointment will depend on qualifications and experience.

The benefits: salary $48,009 to $51,535 per annum (Research Fellow Grade 1, Level A) or salary $54,249 to $64,420 per annum (Research Fellow Grade 2, Level B) and/or $66,455 to $76,627 per annum (Senior Research Fellow, Level C) plus superannuation contributions of 17 percent. A grant in aid of $10,000 per annum will be available.

Employment type: This is a fixed-term (research) position for three years.

Contact: **Mrs. Joan Y. Vosen; Telephone: +61-3-8344-4019; FAX: +61-3-9347-7854; e-mail: j.vosen@medicine.unimelb.edu.au; website: http://www.medfac.unimelb.edu.au/research/fell.htm** for further information and a position description.

Applications to: **Research and Scholarships Officer, Faculty of Medicine, Dentistry, and Health Sciences, The University of Melbourne, Victoria 3010, Australia** or e-mail or FAX as above by the closing date of 30 September 2002. *An Equal Opportunity Employer.*

MARKETPLACE

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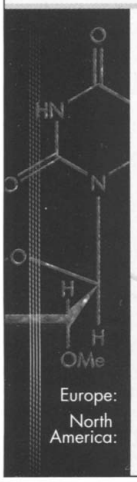

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QIAGEN Instruments

- Automated workstations for high-throughput genomics

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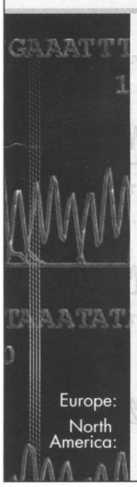
QIAGEN Genomic Services



- Accurate SNP genotyping
- SNP discovery and verification
- High-quality DNA sequencing
- Genomic DNA isolation

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LabelStar™ Array Kit

- Efficient cDNA labeling and cleanup for high signal-to-noise ratios on arrays

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siRNA Oligonucleotide Service

- High-purity siRNA for efficient gene silencing
- Custom and library siRNA, ready to use in cell transfection
- Expert advice on siRNA design for optimal RNAi effect
- Labeled siRNA allows transfection to be easily followed

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HiLight™ Array Detection System

- Highly sensitive detection for your self-spotted or commercial arrays

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LiquiChip™ Suspension Array System

- Multiplex homogeneous protein assays using proven 6xHis-tag technology

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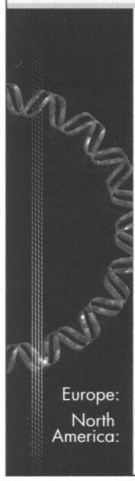
Plasmid DNA Contract Manufacturing Service



- High-quality, endotoxin-free, plasmid DNA
- Comprehensive Quality Control
- Fast turnaround times
- Batch sizes from 100 mg up to 5 g plasmid DNA
- Robust and scalable process

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SensiChip™ DNA Array System

- Complete microarray platform with customized chips
- High sensitivity without amplification steps

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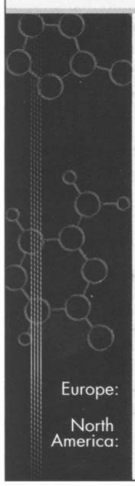
Oligonucleotide Synthesis Services



- High coupling efficiency and salt-free synthesis conditions
- Unique longmer capability
- Large number of modifications available
- Reliable service

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The SensiChip System is not available in the US.
QIAGEN LiquiChip and Robotic Systems are not available in all countries; please inquire.

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