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The universal adapter attaches the DC290 camera to a microscope's 1X C mount and allows a focused image to be projected onto the camera's electronic light-collecting hardware (also called a charge-coupled device, or CCD). The 24-bit color camera system performs well in all respects, providing high-quality digital images suitable for publication.

The MDS 290 software runs on Macintosh or Windows systems and contains both stand-alone applications and plug-in tools, allowing the user to run the system in conjunction with Adobe Photoshop (5.0/6.0). As with other modern digital cameras, the computer uses a USB port to interface with the camera, which yields higher transfer speeds than a serial connection.

Installation of the MDS 290 software required two steps: double-clicking on an installer on the CD-ROM and moving the files to the appropriate folders for Photoshop plug-ins. After this setup, the camera can be controlled either from Photoshop or with the stand-alone applications.

The software allows users to set the zoom, resolution, timer delay, and exposure; to preview the image field; to rotate the image; and to perform software-based enhancements, such as sharpening or field flattening. An option for taking time-lapse images is handy, but at the highest resolution (1700 × 1200) a minimum of 35 s is required between exposures.

The Macintosh MDS 290 software needs updating and improvement. It crashed in the stand-alone application when the Preview function was activated on a Powerbook using System 9.1. Despite the USB interface, transfers were slow on this system, which likely is the bottleneck noted above for taking time-lapse images. Although the software has some shortcomings, it provides a welcome set of controls for microscopy imaging. Most of the problems would not be encountered by users who control their cameras via Photoshop.

—Kevin Ahern

Department of Biochemistry and Biophysics, Oregon State University, Corvallis, OR 97331, USA. E-mail: ahernk@ucs.orst.edu

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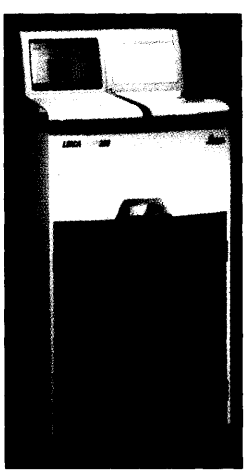

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CONTINUED ON PAGE 886

package developed by Silicon Graphics, the service can now deliver these results to the user via the Internet. Users receive an e-mail alert that results have been posted to their web site, so they can view or download the data in a variety of formats using a secure password. By sharing their passwords, customers can also permit others to access specific data, allowing colleagues around the globe to examine results in part or in full.

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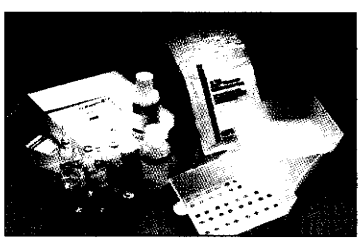

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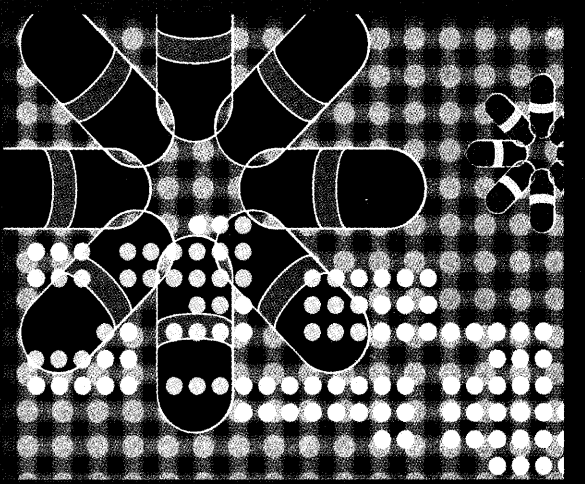

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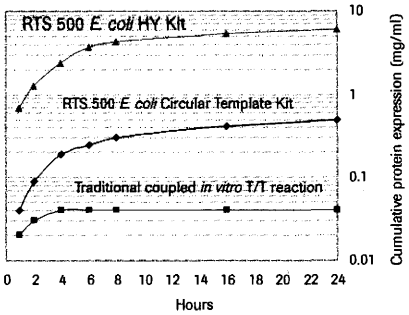

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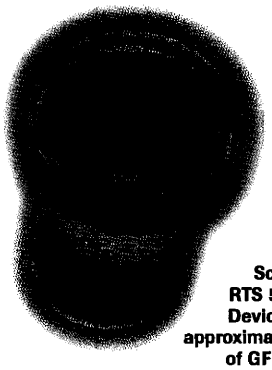

Schematic of a RTS 500 Reaction Device containing approximately 5 mg/ml of GFP following a 24-hour reaction.

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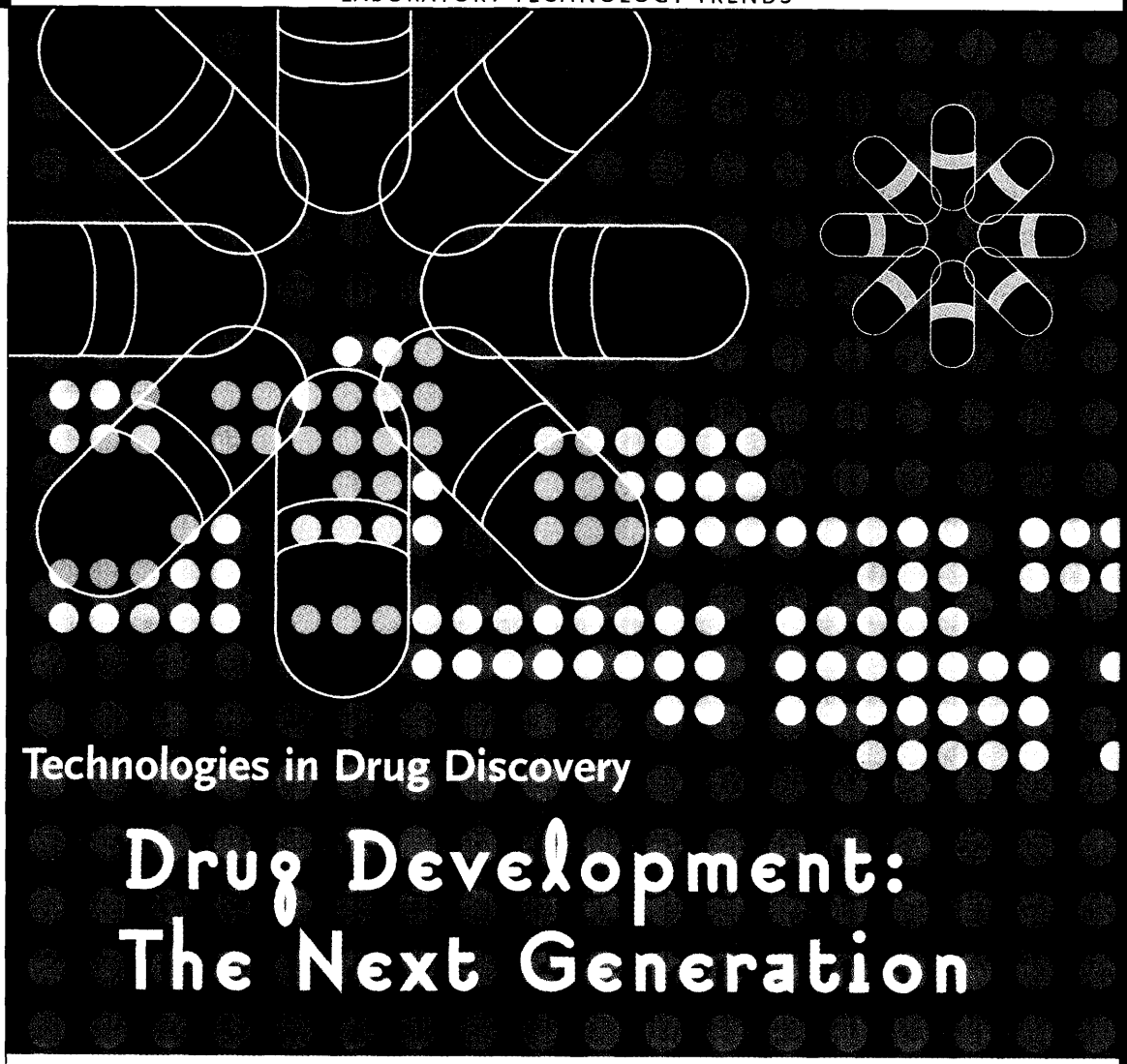
A new era of drug discovery beckons. Tools and technologies derived from biotechnology, genomics, molecular modeling, and computational chemistry promise significant reductions in the costs and development times necessary to bring new drugs to market.

BY PETER GWYNNE AND GARY HEEBNER



Technologies in Drug Discovery

Drug Development: The Next Generation

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A new issue has emerged on the political horizon this year: As the American population ages, pressures are growing to keep the costs of health care under control. "In less than 10 years," says Carl Feldbaum, president of the **Biotechnology Industry Organization** (BIO), "the first wave of the baby boom generation will reach the age of 65. Seniors by definition will have chronic diseases. But it's in the country's interest to keep these seniors as healthy as possible. In addition, the pressures on this generation of seniors and those that follow them to pay for their health care will be daunting if we do nothing to substantially improve the prevention and treatment of diseases of the aging population."

Beyond coping with those pressures, the pharmaceutical industry faces a surge of expirations of key patents. That will mean reductions in pharmas' revenues and profitability. Pharmaceutical companies are responding to these changes by restructuring in such a way that they can work more innovatively, more productively, and more efficiently. Mergers and acquisitions have become common in the industry, and the consolidation shows no sign of slowing down.

However efficiently they operate, pharmas face the undeniable fact that drug development exerts huge costs in money and time. Bringing a new drug to market from scratch today typically takes 15 years and costs about $500 million.

The first stage of this process – drug discovery – represents the critical element in the entire cycle. Not surprisingly, then, pharmas have focused on improving the efficiency of the early stages of drug development programs. During the next few years, companies hope to bring more new chemical entities to market with fewer people and less in discovery spending. Life science manufacturers have developed large numbers of powerful tools and technologies to support these efforts.

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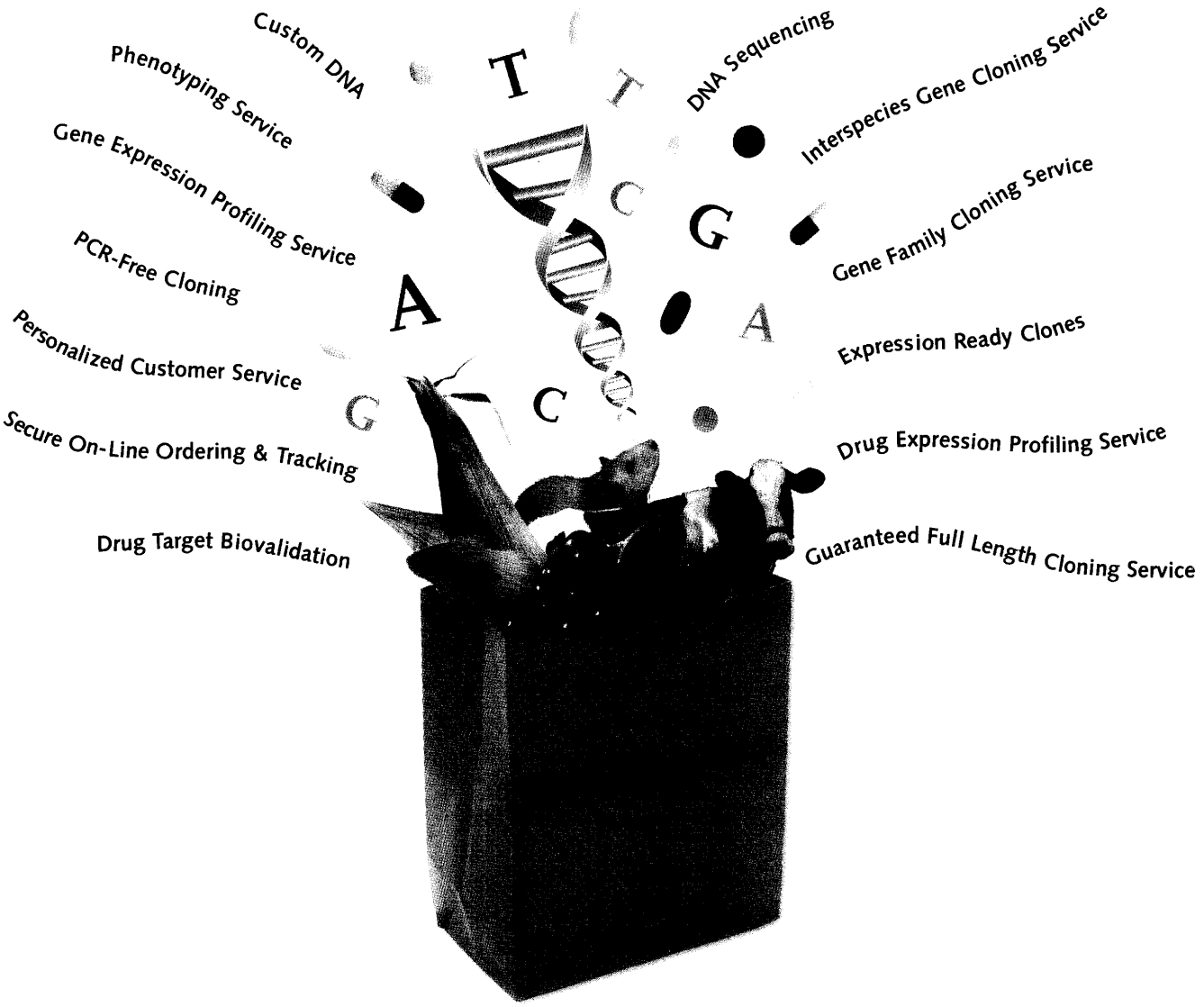

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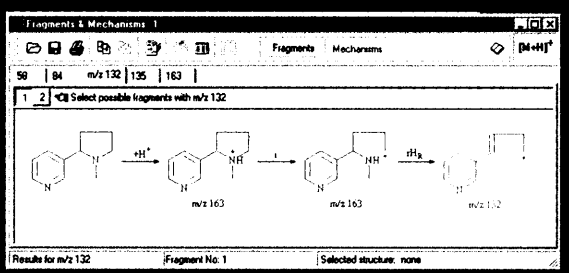

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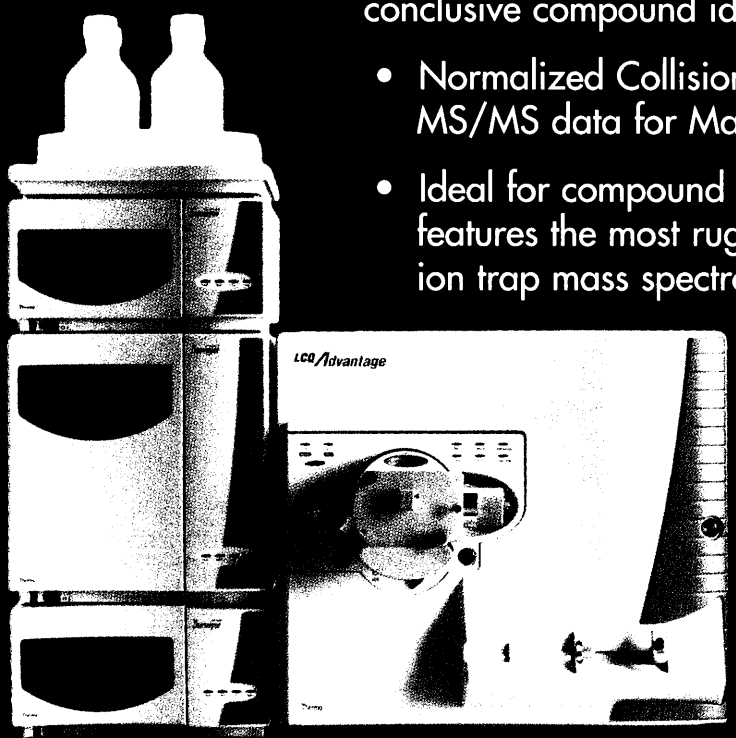

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Drug Development: The Next Generation

At this point biotechnology enters the scene. Ever since 1982, when the **U.S. Food and Drug Administration** approved Humulin, the form of human insulin derived by biotechnological techniques, such drugs have made steady inroads into the pharmaceutical armamentarium. Today, patients have access to about 130 biotech-derived drugs, of which 20 have been approved for use in just the past year. Over 350 more are now in the pipeline. The great majority of those, says Feldbaum, "are dedicated to the diseases and conditions of our aging population." Indeed, he adds, "The vast majority of BIO's membership of almost a thousand is concentrating on the development of drugs to treat the diseases of aging."

JUST A START

Those numbers represent just a start to biotechnology's role in drug discovery. The successful sequencing of the genomes of human and other organisms in the past two years has opened the way to an entirely new approach to drug design. "What's overlooked is that biotechnology and genome sequencing came of age at the same time as information technology," explains Feldbaum. "About 8 to 10 years ago we were working with the knowledge of just one or two genes. Now we have a wealth of information on the ingredients of patients at the genetic level."

With the initial sequencing of the human genome now accomplished, pharmaceutical firms can develop new models of drug discovery that not only reduce costs but also refine the discovery process. These models will be based on identification of the genetic sequences that code for a particular protein involved in the disease process. Extension of that approach holds out the promise of diagnosing diseases more effectively and assessing which drugs are more likely to work on specific patients with specific conditions – and to do so very fast. "Genome sequencing and the application of information technology have had a profound effect," Feldbaum says. "The old style of treatment was random. With information from the genome we'll be better able to pinpoint which biotechnology product to use to treat a patient. The next shift will come when we can develop more fully the ability to predict patients' predispositions to diseases."

Drug delivery will also feel the influence of genomics and related disciplines. "Biotechnology is in the forefront of new delivery mechanisms," asserts Feldbaum. "We're moving to pills and safe implants that release drugs over time. The old problem of patients' having to take their pills on time or to come in for needed injections will be diminished."

Certainly the biotechnology business is gearing up to serve the needs of drug discovery. Forecasts in the mid-1990s that the industry would quickly consolidate from more than a thousand companies to just 50 have proven entirely wrong. Today thousands of biotech companies exist around the world, many of them focused on disciplines such as genomics and proteomics that hardly existed five years ago. And in the aftermath of the demise of the dot-com companies, angel financing and venture capital that used to go into Internet-related companies is now moving into biotechnology. "Our winter meeting drew a lot of former dot-com venture capitalists who were curious but not knowledgeable," recalls Feldbaum. "They saw two fundamental differences: Biotech products have a deep and broad market. And biotech CEOs are a lot more seasoned than dot-com CEOs; they have been through a market cycle going up, down, and up again."

Feldbaum also points out the endurance of biotechnology firms. "If a clinical trial goes wrong a biotechnology company will morph into something else," he says. "Very few of them have disappeared. There's a certain sustainability that is demonstrable."

Indeed, the biotechnology business is becoming a frequent discovery partner to the pharmaceutical industry as it not only provides new tools for pharmas but also, in many cases, performs research and development in the drug discovery process. The tools that have come from the biotechnology industry have clearly enabled pharmas to pursue new programs and to streamline their operations. These tools and technologies include chemical libraries, laboratory automation products, DNA chips and microarrays, and a host of informatics-related software programs. In the remainder of this article we shall survey the techniques and their impact on drug discovery.

A NEW PARADIGM

In the past, natural products provided the predominant source of bioactive compounds and drug candidates. A large percentage of the drugs that exist today originally derived from natural sources. As an example of Mother Nature's power, consider the discovery of pacli-

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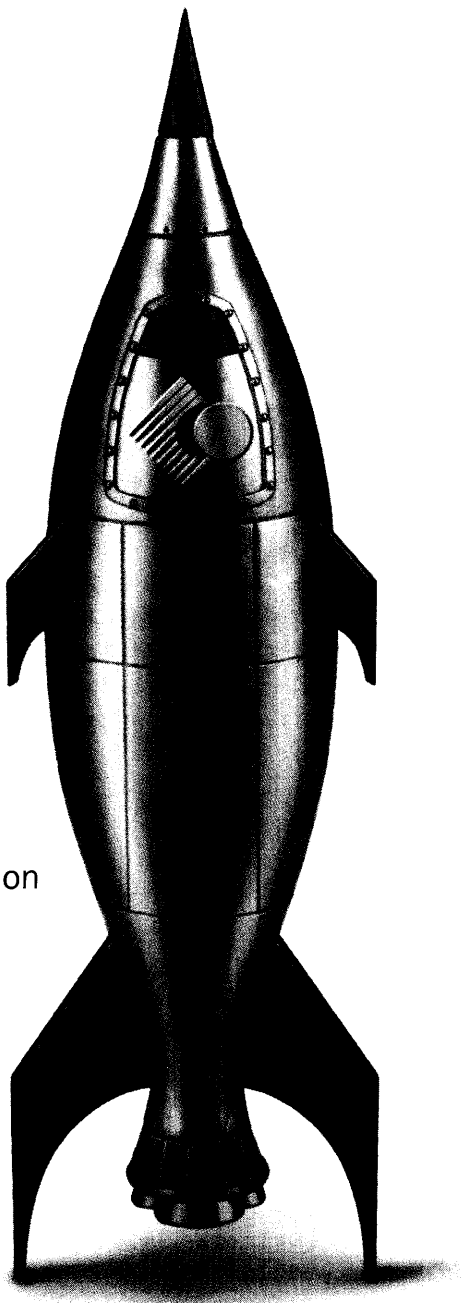

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Drug Development: The Next Generation

taxel (Taxol), a drug produced by **Bristol-Myers Squibb Company**. This natural compound, isolated from the bark of the Pacific yew, has profound anticancer activity. Similarly, most of the antibiotics in use today stem from natural sources.

Early efforts in drug discovery involved screening natural products derived from plants and microorganisms and testing them for activity in animal models. This was a slow and labor intensive process, but it led to the remarkable plethora of medications available at the end of the 20th century. The process hasn't stopped. Several academic and corporate researchers now spend their time tracking down herbal remedies used by remote tribes, in hopes that active ingredients derived from the herbs will have measurable therapeutic effects.

Chemists, meanwhile, have complemented the search for natural products by developing families of compounds with potential biological activity. In doing so they hope that close family members of natural products may show more effective therapeutic power than the original. The production depends on combinatorial chemistry, which uses automated processes to synthesize large numbers of related chemical compounds with a high degree of structural diversity.

Beyond that, advances in molecular biology, genomics, automation and detection, and informatics have shown the way to a new paradigm. This new method of approaching drug discovery and even drug design relies heavily on computational power, and shifts the scientist's efforts from basic laboratory research to virtual research *in silico*. A major change in drug discovery involves the virtual study of bioactive molecules and the design of drug candidates that have attributes similar to those of known bioactive compounds. These technologies are commonly known as molecular modeling and computational chemistry.

TWO KEY TECHNOLOGIES

The new approaches have evolved in recent years. In the past, an organic chemist might have produced a huge number of synthetic molecules in the laboratory without having a great deal of understanding of the ideal compound desired. Today a more refined process is in place. Chemists now engage with biologists to gain a better understanding of the process and mechanisms of a disease before going into the laboratory to synthesize potential drug candidates. In fact pharmaceutical and biotechnology companies involved in drug discovery recruit individuals with a more multidisciplinary approach to their research. These individuals often have M.D.-Ph.D. degrees and experience in both research and clinical work.

Molecular modeling uses sophisticated computer programs that can determine the structures and properties of molecules of interest and then intelligently analyze the data to predict the structure of an ideal drug candidate. This is no simple feat. Data that characterize molecules can exist in many formats, making the integration and analysis of the information very challenging. The analyses demand extremely fast and powerful computers. Several firms have developed software programs for molecular modeling and have found a ready market among pharmas. "Molecular modeling has become part of the armory on which pharmaceutical research and development depend," says Mike Stapleton, executive vice president and COO of **Accelerys**, a subsidiary of **Pharmacopeia**. "You see all the large pharmaceutical and biotechnology companies using it."

The power of molecular modeling stems in large part from the use of high powered, graphics-intensive work stations, such as those produced by **Silicon Graphics.** To solve the problem of data in differing file formats, the industry is increasingly moving to computing environments that use **Microsoft's** Windows NT (which can incorporate Silicon Graphics' servers). "As we move to Windows NT we can define far more open and transformable formats for general use," explains Stapleton. "But the ultimate solution is the platform change that the customers are demanding now. They want to adopt more modern information technology standards around NT and other items such as document management, web tools, and searching for databases."

Computational chemistry emerged at least a quarter of a century ago and started to make an impact on drug discovery about a decade back. "Today," says George Purvis, vice president of **CAChe Software,** a group owned by **Fujitsu Business Systems of America,** "Every pharmaceutical company has a modeling group that does computational chemistry." Researchers in those groups spend time at the computer, exploring possible molecular configurations for their potential drug candidates. "You can think of chemical modeling in terms of modeling against a virtual database," explains Purvis. "The user says: 'I'd like these properties for these molecules,' and picks the procedures by which the properties can be determined." In other words, customers can customize the software to their own *modi operandi*.

The use of molecular modeling programs to predict and design molecules saves both time and the expense of actually screening a huge library of compounds for activity against a target. In addition to CAChe, such companies as **Molecular Simulations**, **Synopsys Scientific Systems**, and **Tripos** have developed computer programs to assist in the design of synthetic molecules likely to have the desired biological properties while minimizing the risks of adverse effects such as toxicity.

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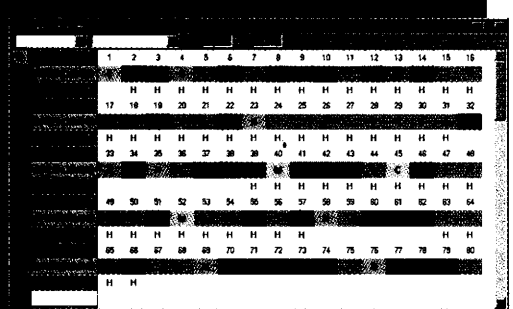
Agouti-related protein docked in a homology model of a brain GPCR. (courtesy of Xiang Wang)



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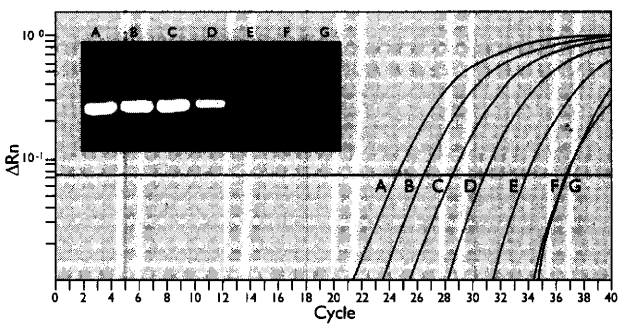

Amplification Plot, Real-time GAPDH PCR
Lane A) 500 cell equivalents B) 200 cell eq C) 50 cell eq D) 10 cell eq E) 1 cell eq F) no-RT control from 500 cell eq G) no-template control

Inset: Gel-based GAPDH PCR, 35 cycles
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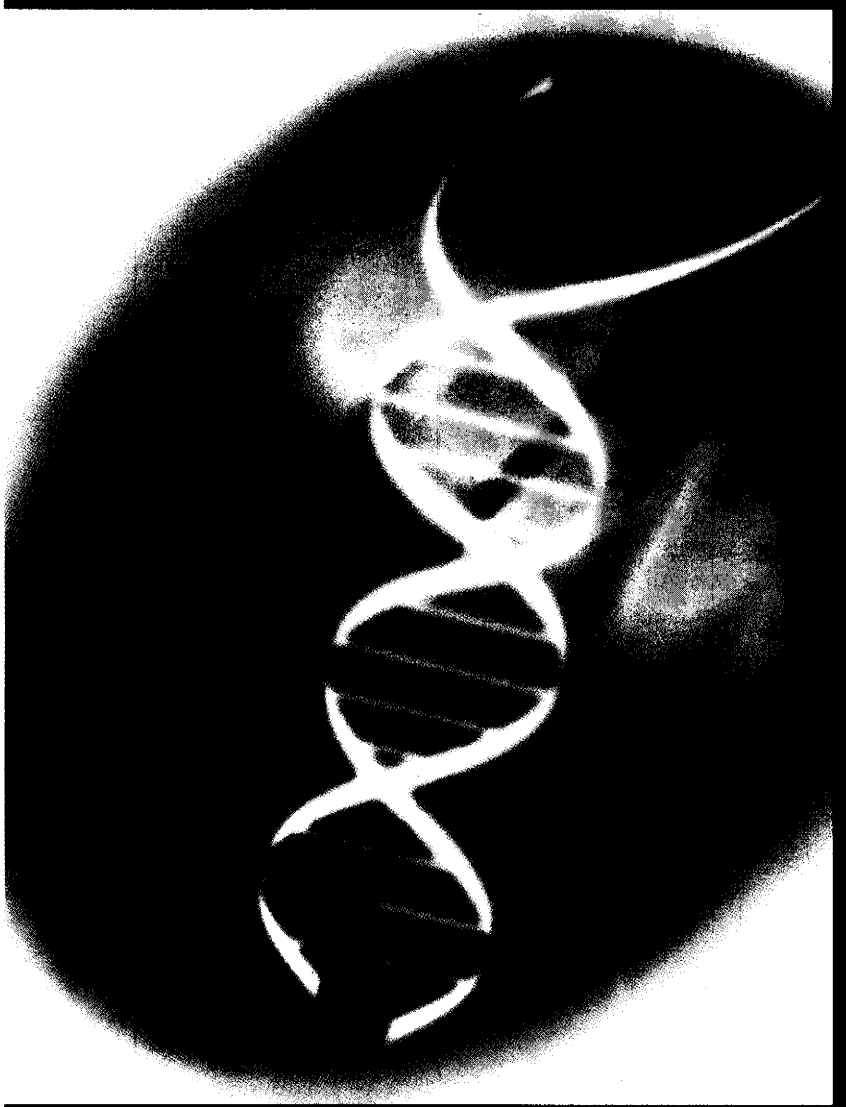

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Drug Development: The Next Generation

THE LURE OF LIBRARIES

Computational chemistry and molecular modeling provide just two of several approaches to a fundamental starting point of drug discovery: identifying lead compounds that can be screened *in vitro* for possible therapeutic activity against systems that mimic the behavior of biological targets. New tools have helped to speed up and rationalize what used to be a slow, rather random process. As a result, drug investigators need access to a relatively large number of compounds to screen against each specific drug target.

Scientists who don't want to create their own lead compounds can turn to chemical libraries. Several companies, among them **MDS Panlabs**, offer collections of chemicals and biomolecules for screening work.

Sigma-Aldrich Corporation is notable in offering more than 100,000 products for screening. "Our Library of Rare Chemicals has the role of fulfilling drug discovery's key need for fast and reliable delivery of high quality, diverse compounds," says Robert Wandler, the library's product manager. "As the first commercial screening compound library, it has grown from a somewhat random collection of interesting compounds to a small thriving business. We make thousands of additions to the library every month, using the computational and medicinal skills of our chemists and managers. We assess these additions using such *in silico* techniques as assessment of log P, hydrogen bond acceptor and donor groups, and rotatable bonds, as well as 'visual screening' by our chemists."

Keeping any chemical library up to date demands a steady source of new products. "We work with a select group of manufacturers," says Wandler. "We are careful to add only diverse drug-like molecules. It is important to our customers that we don't waste their time offering them structures that are not of interest to them."

Whatever their sources, lead compounds must be separated and characterized. "Small molecule characterization is relatively simple," says Ken Imatani, LC-MS product manager for **Agilent Technologies**, a market leader in the field for several years. "But large molecule characterization can be a much tougher task. These molecules have various levels of structure. To understand the really interesting information about them you have to have the fine structural details."

Common methods of separation include gel electrophoresis, capillary electrophoresis, high performance liquid chromatography, microfluidics, and microarray technologies. Similarly researchers have plenty of technical options for detecting compounds, among them visible, ultraviolet, and fluorescence optical methods, mass spectrometry, and nuclear magnetic resonance. "Each has its own place, and together they provide complementary and confirmatory information," says Imatani.

HYPHENATED TECHNOLOGIES

Recent years have seen the arrival of hyphenated technologies such as liquid chromatography-mass spectrometry (LC-MS) that couple separation and detection procedures. "These increase throughput and avoid the need to transfer very small amounts of already small samples multiple times," says Imatani. The growing use of these technologies stems in large part from the reduction of data processing costs for mass spectrometry. "In the early 1980s the data system hardware for a mass spectrometer often cost nearly as much as the instrument itself – perhaps $75,000 to $100,000," recalls Bryan Miller, Agilent's LC-MS product manager for software applications. "Nowadays you're hard pressed to spend more than $10,000 on a high-end system."

Typically, units from Agilent and other vendors are integrated with personal computers and powerful data analysis systems for a more automated approach to separation and identification. Other factors in the increased use of LC-MS are dramatic advances in sensitivity and ease of use; the application to the analysis of proteins, peptides, and oligonucleotides; and the development of suitable software for identification of protein.

Increasing productivity means that more samples must be screened in shorter time, preferably with less expenditure of labor. To accomplish this, manufacturers have developed faster and more capable screening systems. These range from semiautomated work stations to fully automated robotic systems. "When you are performing cell-based assays to validate targets, to screen candidate compounds, to optimize leads, or to test for toxicity, you are doing cell biology; and cell biology has traditionally been a slow, manual, exceedingly low throughput science," says William Busa,

Chips to Hits

Chips to Hits, the eighth annual international microtechnology event organized by **IBC USA Conferences Inc.®**, will take place from October 28 to November 1 in San Diego. "The event addresses various applications of microtechnology to the pharmaceutical and biotech industries," says Abby Votto, IBC USA's marketing manager. "The meeting delivers comprehensive updates on the technologies that are redefining drug discovery through diagnostics."

Topics to be discussed at the event include Commercializing Drug Discovery Technologies: Financial and Legal Considerations, The New Molecular Diagnostics, and Emerging Technologies. The event will also include sessions on the application of microarrays to genomics, proteins, and diagnostics.

For further information you can check the event's website, www.chipstohits.com. Alternatively you can phone 508-616-5550, fax 508-616-5522, or write to IBC USA Conferences Inc. at One Research Drive, Suite 400A, Westborough, MA 01581-5195.

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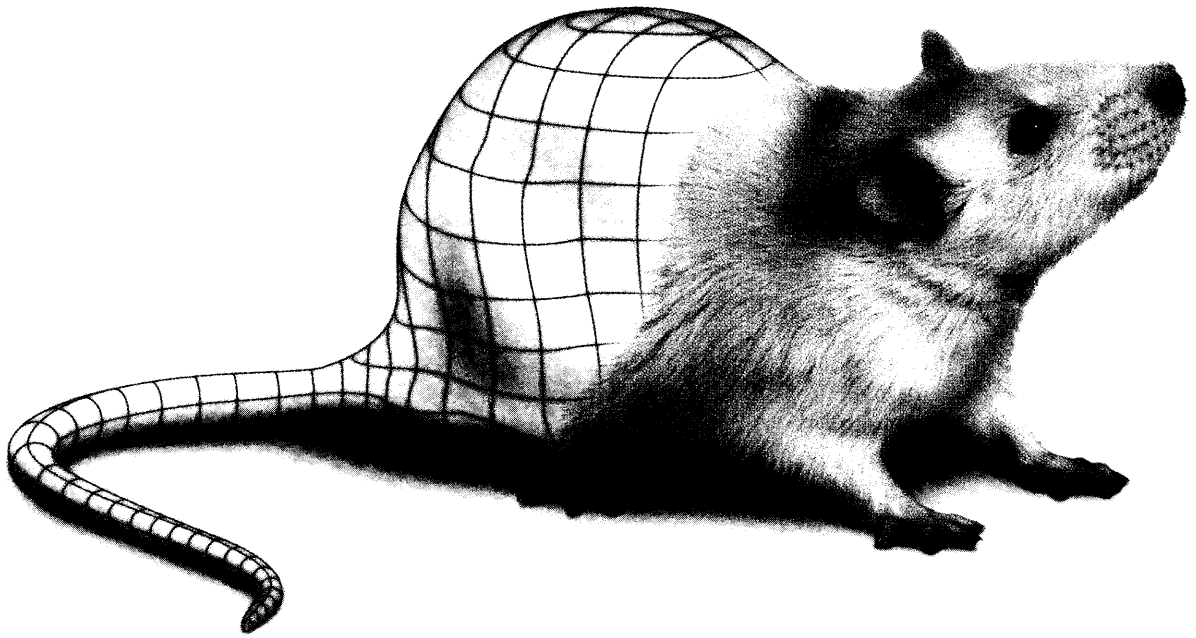

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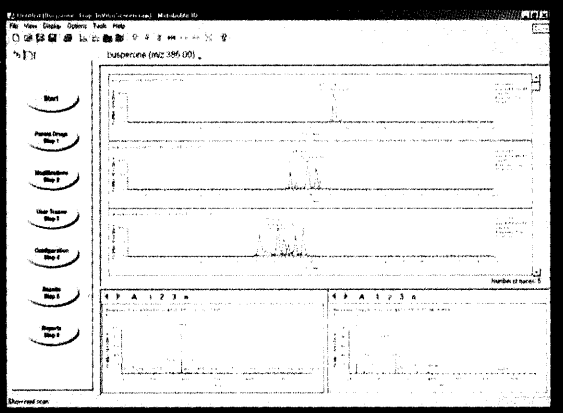

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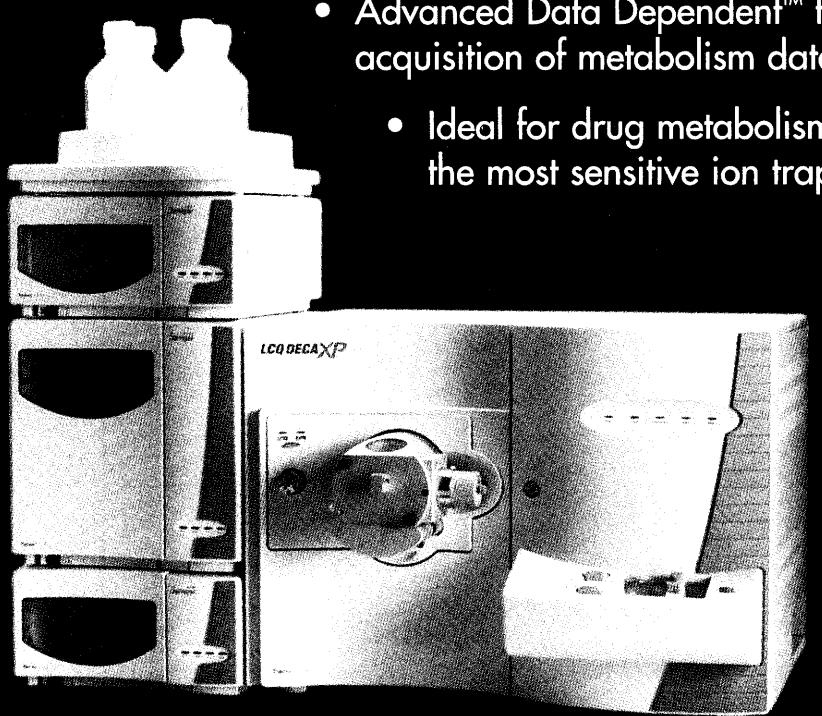

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Drug Development: The Next Generation

chief scientific officer of **Cellomics, Inc.** "Keeping the pharmaceutical companies' pipelines full is all about increasing bandwidth. If one step in the process is too slow you have a bottleneck and the bandwidth of the overall drug discovery process suffers. By enabling automated cellular analysis, Cellomics' technologies aim to remove one of the last remaining bottlenecks in the drug discovery pipeline."

Cellomics' automated assay systems provides one example of laboratory automation. Others include liquid handling systems such as multichannel pipetters and 96-well plate washers. Intended for use in the research lab, these will be replaced by bigger and more automated tools as the process of drug discovery moves from research and development to scale up. **Hamilton Company**, **Nalge Nunc International**, **Wheaton Science Products**, and others provide many of the basic systems used for semiautomated liquid handling.

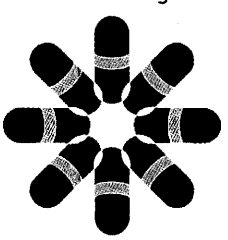
Several systems or work stations can perform several functions in addition to the basic liquid handling tasks. These units can fill, wash and rinse, and read fluorescence or other characteristics of a sample. Work stations of this type are often designed to run unattended. They can greatly reduce the manual labor required to fill and dose plates with reagents and are usually designed to perform a somewhat limited range of tasks.

This end of the range of laboratory automation includes robotic systems designed by **Applied Biosystems**, **Beckman Coulter**, **Cell Robotics**, **Packard Bioscience**, **Qiagen**, and **Zymark**, among other vendors. These companies offer sophisticated, versatile systems that can perform many of the functions needed to screen compounds for biological activity.

CUTTING COSTS BY REDUCING VOLUMES

Robotics help pharmaceutical companies to cut the costs of drug discovery by reducing labor requirements. Firms can also meet financial targets by lowering the costs of materials. In the past, a typical assay might have required one milliliter of sample. Today, assays routinely use sample amounts in the microliter range. As sample volumes decrease, so do the costs of reagents – a significant factor in laboratories that deal with literally thousands of lead compounds. Better yet, the reduction of sample volumes can reduce the size of a laboratory needed to process the work.

Equipment from **Corning**, **Eppendorf Scientific**, Nalge Nunc, and others has undergone a transition from 96-well to 384-well to 1,536-well plates. That process has reduced the volumes of samples from hundreds of microliters to nanoliters in some cases. Reducing the sample volumes used in these microwell plates may not seem very complicated at first glance. However, collecting and dispensing such small nanoliter volumes presents many challenges. "The move to 1,536-well plates is being hindered by an instrumentation gap," says Carl Jones, manager for high throughput systems at Finnish company **Thermo Labsystems Oy**. "The problem is that the total assay volume is down at the 2 to 5 microliter range in a 1,536-well plate. This means that volumes in the nanoliter range now need to be addressed."



Having proved its potential in a molecular or biochemical assay, a compound will undergo a cell based assay to develop a more realistic sense of how it will perform in a cellular system. What used to be a very difficult and tedious procedure has become much more automated and consistent. Applied Biosystems, Cellomics, and other vendors have developed highly automated systems for cell based assays. These instruments allow scientists to culture living cells very closely related to the cell types found in specific organs. This gives researchers a better understanding of how cell type may affect the activity of the compound being evaluated.

The cell based assay can also provide an indication of cytotoxicity. That permits researchers to cut their losses on drug candidates at an early stage of development, well before they reach clinical trials. "Discovering complications during clinical trials is horribly expensive," says Cellomics' Busa. "By that point you've already spent years and hundreds of millions of dollars developing your compound."

STARTING FROM SCRATCH

Another technology permits pharmaceutical scientists to work at higher speed for lower cost. DNA chips or microarrays allow researches to screen a large number of compounds for biological activity against a target in a single experimental run. This technology is an excellent example of assay miniaturization. Scientists can spot very small samples onto a solid surface and subject them to the target molecules to see which spots have biological relevance. These chip experiments produce large numbers of data points and require specialized equipment to analyze results. Genotyping chips from companies such as **Affymetrix**, **Amersham Pharmacia Biotech**, **Clontech**, Corning, **Motorola**, and **Stratagene** allow researchers to screen many genes in an organism's genome for involvement in a specific disease process.

Scientists who want to start from scratch have plenty of options for obtaining the basic components they need to design and assemble DNA chips. Vendors provide the glass slides, spotters, and even sets of oligonucleotides for building microarrays. "We sell whole genome sets for human, mouse, and other model organisms such as yeast and *Drosophila*," says Nathan Hamilton, president of **Operon Technologies**. "We can also make ready-to-print oligos using our bioinformatic services.

DNA chips can also be used for expression profiling to determine which genes are producing changes in the cell when it is responding to different environmental conditions. Clontech offers microarrays of this type. This technique is useful in comparing how cells change when they are diseased. Scientists hope that studying dif-

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Drug Development: The Next Generation

ferent protein profiles will lead to discovery of proteins involved in the disease process.

Sequencing of the human genome has given a major boost to the pharmaceutical business. But applying that work to drug discovery requires a certain amount of translation. "It's like developing one's vocabulary and then trying to read and understand the meaning of a novel," says David Miles, marketing director of **Invitrogen**. "The next step in this whole process involves cloning and expression and analysis of what the individual components are."

Paul Goodson, Invitrogen's vice president of investor relations, points out the difficulty of taking that step. "We still believe that an understanding of the genome is critical to the development of therapies," he says. "But it's not going to be as easy as everyone originally thought. Quite a lot of experimentation will be necessary before effective therapies are developed. The more efficient you can be in screening and evaluating, the more quickly will you be successful."

Certainly the many products and kits for gene cloning and expression produced over the last decade have taken much of the black magic out of these molecular techniques. Kits with all the components necessary for cutting genes from a chromosome and inserting genes into expression vectors are now relatively simple to use. These products will play a key role in translating the genomic sequences into more meaningful information. In addition to Invitrogen, the handful of corporate pioneers in the field includes **New England Biolabs**, **Promega**, and Stratagene.

DEALING WITH DATA

The research community has moved to the molecular level in its attempts to understand cellular functions. Scientists can now determine the DNA sequence of a gene and the amino acid sequence of a protein or peptide. Databases that hold these bytes of information often use different design architectures and processing systems, thereby complicating research groups' ability to share their data. Hence **Sun Microsystems** and other companies that have played key roles in the development of computer equipment for life science investigation face a situation similar to that which confronted conventional computing 20 years ago: the need for common formats. Standardization will grow in importance as more researchers access both each other's data and the information in public and private databases.

Dealing with data effectively is indeed essential for pharmaceutical researchers who want to make use of human genome sequences. "If you're doing direct discovery the genome sequence alone is not of much value," says Roy Whitfield of **Incyte Genomics**. "You want the protein sequences." Thus Incyte provides the data content that permits scientists to get what they need from sequence data for drug discovery. The company backs up its data with sequence-verified clones for researchers to conduct safe lab experiments. **DoubleTwist**, **InforMax**, and other companies also work in this area.

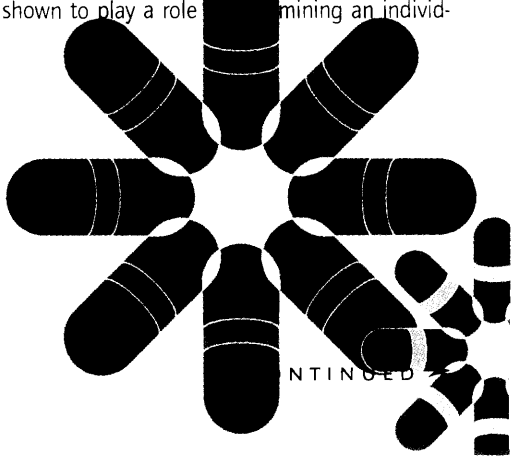
Several genes have already been identified and implicated in diseases. Researchers know, for example, that BRCA2 is associated with breast cancer susceptibility. **Celera Genomics** is in the process of sequencing the rat genome. That will be useful in matching known sequences in the rat genome with analogous sequences in the human genome. That may lead to a better understanding of so-called orphan genes that currently have no apparent function in the human genome.

This type of work leads directly to proteomics, the study of the structure and functional characteristics of proteins. Scientists recognize that a single gene may produce more than one protein as a result of alternative splicing or other post-transcriptional modifications. Because of these variations, it is also important to determine which form of a protein may be implicated in a disease process. Proteomics becomes an even greater challenge than genomics because proteins and polypeptides have three-dimensional conformations that dramatically impact their biological activity. Databases such as that of the **Swiss Institute of Bioinformatics** house the sequence information of many peptides for researchers interested in using these data in their work. Companies such as **Proteome** and **AxCell Biosciences** also provide databases for proteomics research.

Yet another method of dealing with data has gained a growing role in drug discovery. Finding the right compounds used to mean spending long hours searching the literature and making calls to colleagues who might have access to substances with specific characteristics. To reduce this time and increase the efficiency of locating possible drug candidates, companies have developed searchable databases and powerful search engines that allow researchers to enter the characteristics of a compound of interest and search for natural or synthetic compounds with similar properties. "Cheminformatics is the science of keeping track of chemicals and how they affect different disease processes," says Tad Hurst, chief technical officer of **ChemNavigator Inc**. "It's a new asset," adds Scott Hutton, the company's president and CEO. In addition to ChemNavigator, **MDL Information Systems** and **CambridgeSoft** provide scientists with searchable chemical databases and provide sources for the hits that the searches reveal.

DIAGNOSIS AND TREATMENT

The ultimate goal of the data handling is information that has practical value in the diagnosis and treatment of disease. Single nucleotide polymorphisms (SNPs) have emerged in recent years as significant players in the diagnostics arena. These are DNA base [illegible]es that have been shown to play a role [illegible]mining an individ-



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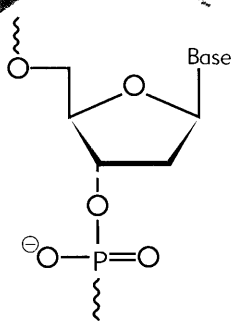

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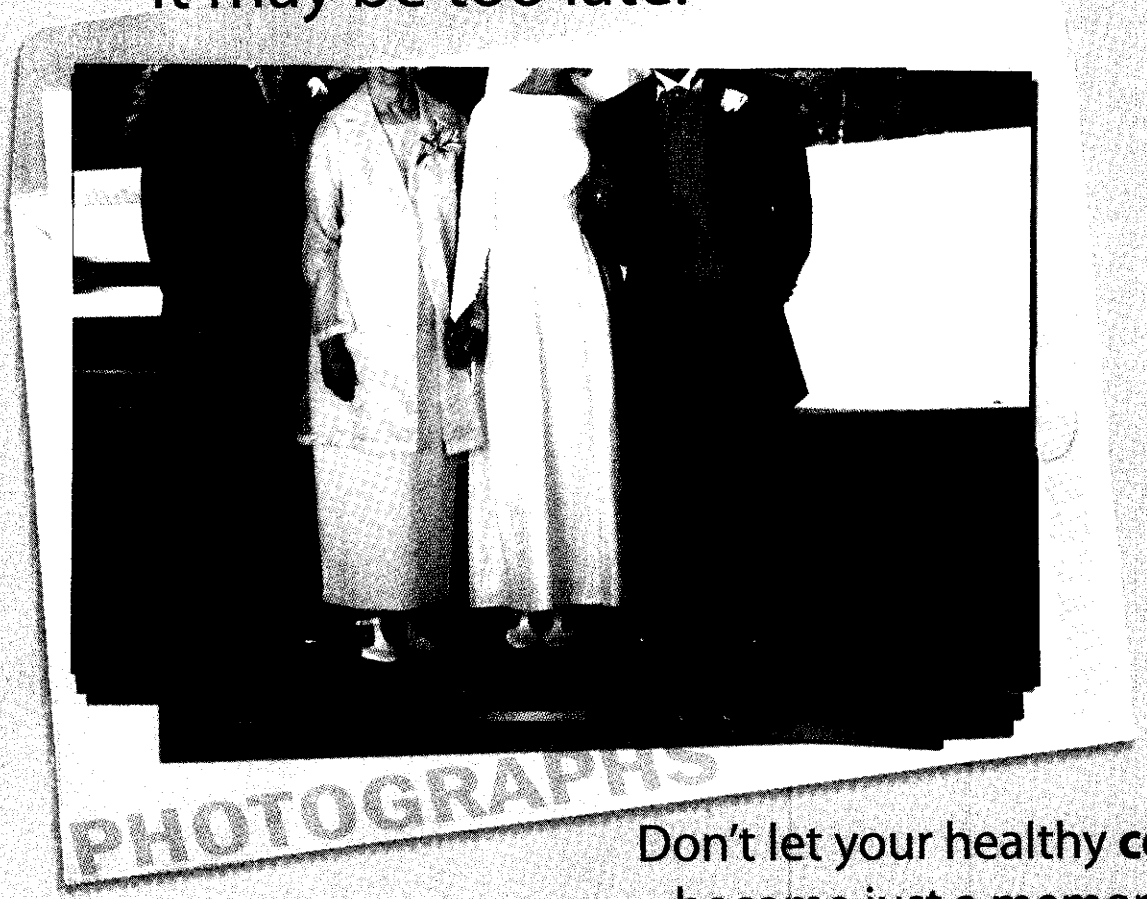

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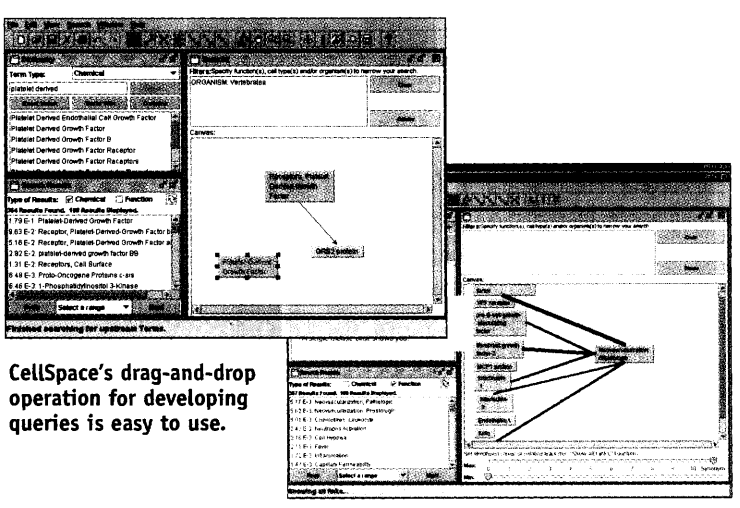

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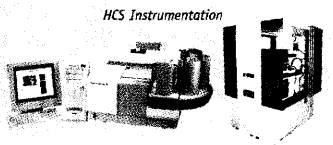

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Drug Development: The Next Generation

ual's risk of developing a specific disease. SNP analysis has formed the basis for several recently founded companies, including **Genome Therapeutics**, **CuraGen Corporation**, and **Gene Logic**. Analysis that associates specific SNPs with particular diseases will open the way to diagnostic tests that can screen populations to pick out those individuals at increased risk of disease. The tests will have particular value in identifying individuals in such an early stage of a disease that they show no symptoms at the time of screening. Early diagnosis followed by the selection of appropriate treatment plainly increases patients' chances of cure and survival.

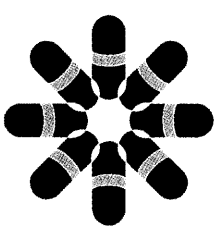
Research on SNPs also points toward the concept of personalized medicine. The idea is to tailor treatments to specific subpopulations of individuals according to their genetic characteristics. Once put into practice, the concept will provide better therapeutic effects while minimizing side effects for patients who may, for example, lack tolerance to a particular drug.

Meanwhile the surge of therapeutic products developed with molecular biology techniques is beginning to reach the market. Herceptin, produced by Genentech, provides a recent success story. This biotech drug is based on countering the overexpression of HER-2, a specific gene product involved in breast cancer. **Genentech** pursued the development of an antibody directed to the extracellular domain of HER-2. The drug appears to have several effects, including down-regulating the HER-2 receptor.

In May 2001 the FDA approved Gleevec (imatinib mesylate) for use in the treatment of the blood cancer chronic myelocytic leukemia (CML). Manufactured by **Novartis**, Gleevec is a protein-tyrosine kinase inhibitor acts on the Bcr-Abl tyrosine kinase, which is abnormally upregulated in CML. The drug inhibits proliferation and induces apoptosis (a form of cell death) in Bcr-Abl positive cell lines as well as fresh leukemic cells from patients with CML. Early clinical trials revealed that the drug had profound effects on CML patients. As a result of that finding, the drug's efficacy, and a good understanding of the molecular mechanisms of its action, the FDA put Gleevec on its fast-track approval process.

Fresh understanding of disease processes at the molecular and cellular level is leading to new means of delivering therapies as well as new drugs. French firm **Neurotech S. A.**, for example, is developing cell based therapies for diseases of the eye. "Biotechnology is largely based on proteins, but you can't deliver proteins to the eye," explains Tom Shepherd, Neurotech's president and CEO. "We feel that by using cells as a delivery system we can open the eye to biotechnology. We know that proteins work when injected into the eye. Our focus is less drug discovery than taking previous knowledge of proteins and finding a practical way to deliver them."

Neurotech has two broad technology platforms. Its traditional method of cell therapy transplants human immortalized retinal cells into the subretinal space of the eye to replace degenerating cells in treating age related macular degeneration, the main cause of blindness in adults. With broader application, the company is working on encapsulated cell technology. The basis of this is to place human retinal cells in an implantable semipermeable membrane to protect them from the immune system while allowing the cells to continuously release a therapeutic protein in the eye. "We have good data in the case of retinitis pigmentosa [another eye affliction] following implantation," says Shepherd. "We see no reason why we could not get a device that can be implanted in a person once every year."



SOURCING AND OUTSOURCING

While high profile boutique vendors of specialized biochemicals and reagents play a strong role in the pursuit of drug discovery, researchers in the field often benefit from general supply companies as sources of the equipment and supplies that they use in their everyday work. In the United States, companies such as **Fisher Scientific** and **VWR/ Scientific Products** provide the basics for research and development in this industry. Across the Atlantic, **Merck Eurolab** provides the same type of service.

In addition, pharmaceutical researchers rely on specialized suppliers for help with such mundane but essential tasks as removing the solvents used in preparation or purification of a bioactive compound. "Solvent removal is used throughout drug discovery but particularly in synthesis," says Harry Cole, managing director of **Genevac Ltd.** Founded in 1990, the British company supplies equipment for solvent extraction and other synthesis tools. "We look at maintaining purity because the drying process tends to cause cross-contamination," adds Cole.

Pharmaceutical companies have also streamlined the drug discovery process by outsourcing tasks that do not form part of their core competence. Outsourcing permits individual companies to focus on and invest in areas of strength without the distraction of having to manage unrelated processes. "The smaller pharmas tend to outsource process development and manufacturing as they don't have the resources and facilities," says Vincent Bille, customer service and global development manager of **UCB-Bioproducts**. "With big pharma it's a mixed picture. The decision on whether or not to outsource depends on the in-house expertise in the specific field and on how much control they want to retain on the activity or the product."

What is certain is that pharmas can outsource about every facet of drug discovery. "The broad range of contract services spans the spectrum from sourcing material development for combinatorial chemistry to high throughput screening," says Richard Mitchell, senior director of pharmacology for **MDS Pharma Services**. "We are not ourselves involved in drug discovery," adds Bille. "Rather, we provide services to companies that are involved in drug discovery and drug development. We specialize in peptide and

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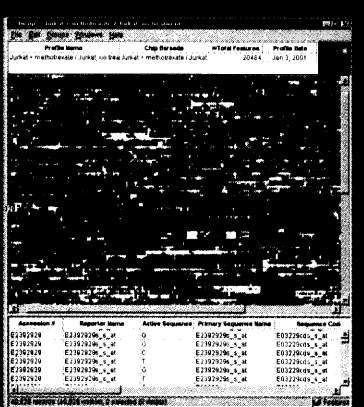

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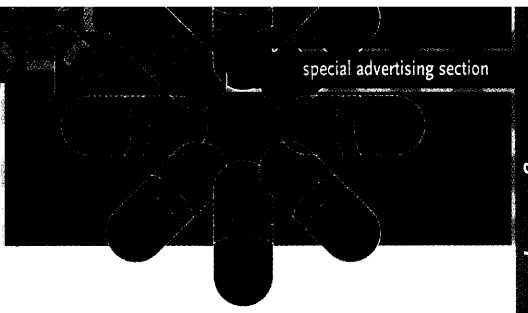


peptidomimetics manufacturing, starting as early as the synthesis of pre-lead compounds."

Outsourcing has become such a significant factor in many drug discovery programs that outsourcing organizations have become strategic partners, as opposed to short-term sources of help, with the pharmas that engage them. That type of arrangement offers one particular advantage. "Most contract research organizations have a broad geographic presence," explains Mitchell. "So they know local regulations and have contact with local patient groups."

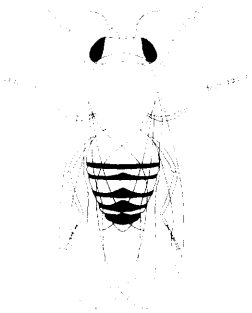
WHAT NEXT?

The sequencing of the human genome will provide researchers with a new tool for rational drug design. Scientists can now use DNA sequence data to look for genes that may be related to disease and to help answer fundamental questions about how the disease process works. The next challenge they face is gaining a better understanding of the complex relationship between genes and the proteins they produce. Proteomics represents the next big wave in the biotech and pharma communities. And since researchers now recognize that one gene can produce more than a single protein, the processes of transcription and translation could be intimately involved in both cellular regulation and the disease process. As with most scientific endeavors, the more investigators learn the more they understand how much more there is to learn.

Researchers will plainly need more powerful tools to pursue that learning and understanding. In response, manufacturers will respond with more innovation, providing more powerful data handling systems and more powerful analytical tools. And informatics will take its place at the center stage of this new wave, allowing researchers to manage and unravel the flood of data that their large-scale experiments are producing.

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

Little fly, big research.



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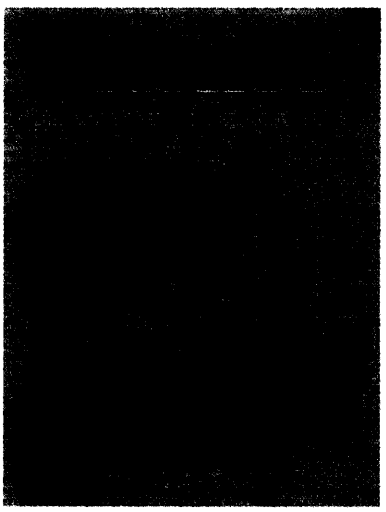

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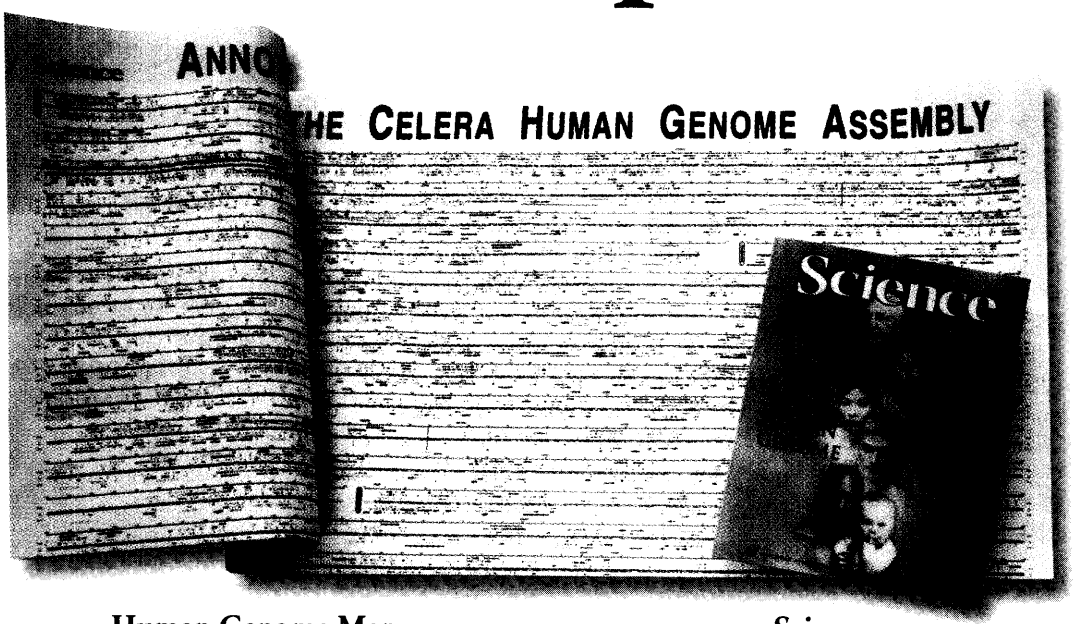

Human Genome Map
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30,000–40,000 genes

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Careers for B.S. and M.S. Scientists

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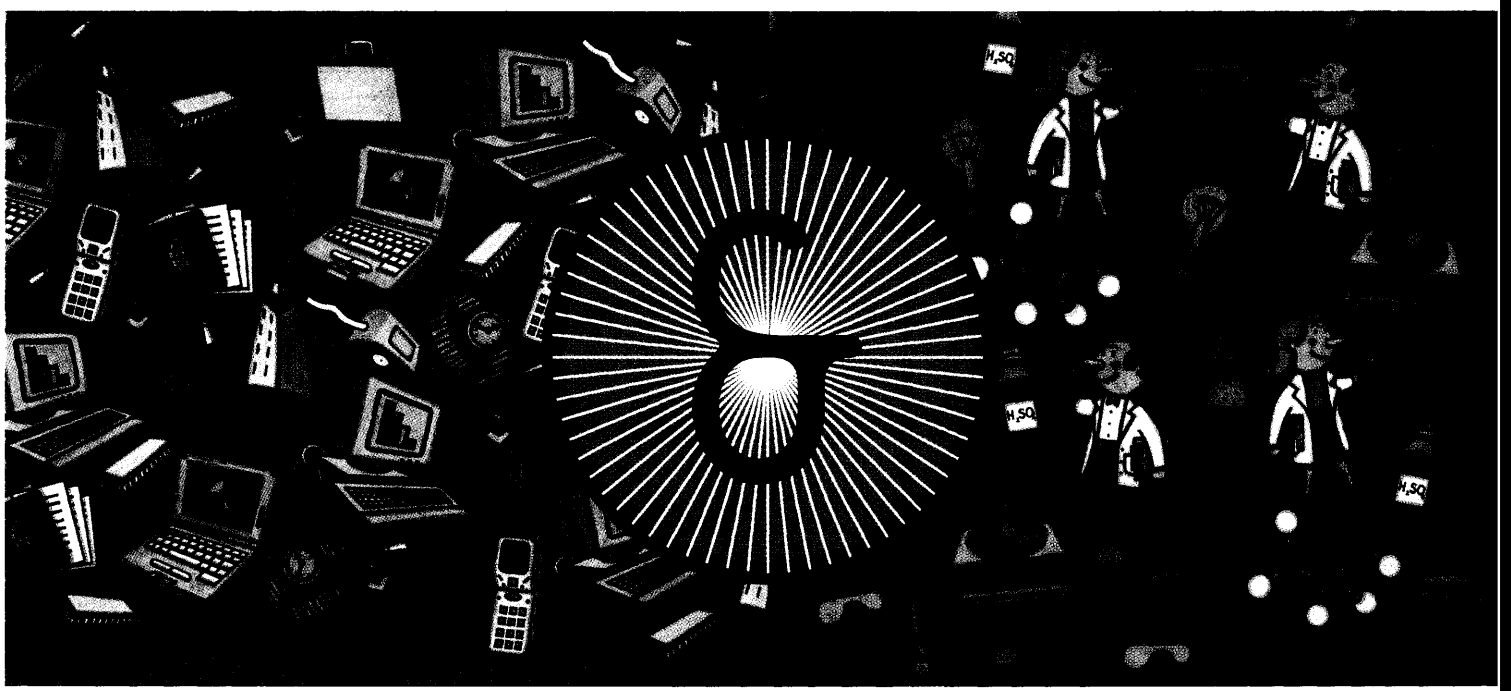

Scientists with Bachelor's and Master's degrees can find satisfying industrial careers in the lab and several other fields, among them clinical trials, regulatory affairs, marketing, and technical assistance. Here we outline several options and the credentials necessary to pursue them. BY PETER GWYNNE

outSIDE

The Laboratory

A former science editor of Newsweek, *Peter Gwynne writes about science and technology from his base on Cape Cod, Massachusetts, U.S.A.*

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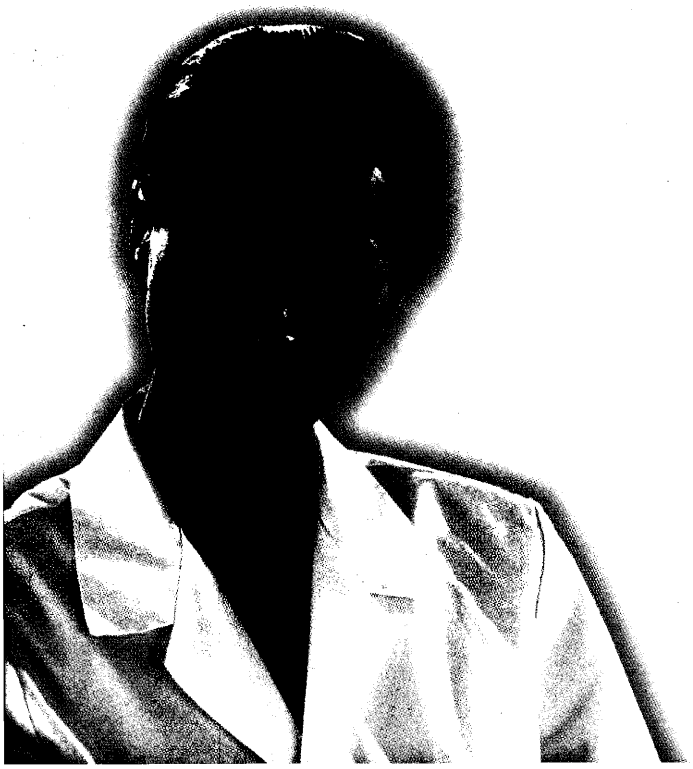

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You will provide leadership in biophysical analysis of therapeutic targets with emphasis on enzyme inhibitors. A PhD in Biochemistry, Molecular Biology or related life science discipline and 0-6 years of experience are required. Experience must include a strong background in cloning, expression, protein purification and characterization, ligand binding determinations and enzymology. Experience with biophysical methods such as X-ray crystallography, NMR, fluorescence, circular dichroism, BiaCore, radioligand binding, calorimetry and protein unfolding is highly desirable. **Job Code: PAD/SCJ/SRI/1359HS**

PhD Scientist Tumor Biology

Joining a team dedicated to discovering new small molecule anti-cancer therapeutics, you will design, supervise, conduct and analyze *in vivo* efficacy studies using animal models of cancer. A PhD and 3-5 years of postdoctoral experience in Tumor Biology, *in vivo* Cancer Modeling and Efficacy Evaluation are required. Knowledge in multiple areas of cancer research (molecular biology, cell biology, pharmacology, histology & immunology) are preferred. **Job Code: PAD/SCJ/SRI/1604HS**

PhD Scientist Antimicrobial Drug Discovery

You will be responsible for the performance of functional analysis of antimicrobial drug targets, mechanism of action/resistance studies, and development of biochemical assays for high-throughput screening and structure/activity relationships. A PhD and 2-3 years of postdoctoral experience in microbial genetics, physiology or biochemistry are required. Industry experience is highly desirable. **Job Code: PAD/SCJ/SRI/1644HS**

MS Research Associate Allergy

You will join an innovative team researching new discoveries in Allergy Therapy. An MS in Cell Biology, Immunology or Biochemistry as well as a background in tissue culture and lymphocyte and leukocyte biology are required. A background in receptor binding assays, chemotaxis and/or calcium fluorescence assays is desired. **Job Code: PAD/SCJ/SRI/1619HS**

BS/MS Research Associate - Tumor Biology

You will support and contribute to *in vivo* evaluations of new therapeutics and anti-cancer research targeting oncogene signal transduction, tumor angiogenesis/metastasis and hormone regulated tumor progression. A BS/MS in Biological Science and at least 2-4 years of experience with *in vivo* models (tumor implantation, dosing, surgery, histopathology) and mammalian cell culture are required. Expertise with biochemistry, molecular biology and immunology is highly desired. **Job Code: PAD/SCJ/SRI/1605HS**

BS/MS Research Associate - Cell Culture Lab

You will be responsible for a cell culture lab and all phases of cell-line storage, maintenance, expansion and production that will provide the necessary mammalian cells for genomic-based and other cell-based assays generated for high-throughput screening. A BS/MS in Biological Science/Biochemistry or related discipline and 3-5 years of experience in a major cell culture facility providing mammalian cell culture and cell-based assays are required. Experience in growing and categorizing recombinant cell lines is a must. Familiarity with automated equipment and processes such as Mark 4 Cellmate is highly desired. **Job Code: PAD/SCJ/SRI/991HS**

BS/MS Research Associate High-Throughput Screening

Joining a team of scientists involved in automated high-throughput screening, you will be at the front line of new drug discovery for cancer, asthma, hepatitis, AIDS and other diseases. You will be responsible for implementing and running high-throughput assays in direct support of our automated new drug discovery effort, FLASH. A BS/MS in Biochemistry or Biology (with Biochemistry minor) and research experience in the area of enzyme or receptor kinetics, characterization, regulation and signaling are required. Knowledge of laboratory equipment, automation and computers, biochemical/molecular assay methodologies and automated laboratory equipment and techniques is desired. **Job Code: PAD/SCJ/SRI/1607HS**

BS/MS Research Associate - Genomics

You will join a cutting-edge team concentrating on GPCR characterization and screening. A BS/MS in Biochemistry or Molecular Biology and 1-3 years of experience in the pharmaceutical industry are required. Experience in mammalian cell culture and cellular bioassays is a must. Familiarity with high-throughput screening instrumentation such as FLIPR as well as a background in molecular techniques such as tranfection, cDNA cloning and sequencing are desirable. **Job Code: PAD/SCJ/SRI/621HS**

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BS/MS Research Associate Electrophysiology

You will provide cardiovascular pharmacology support and be responsible for whole cell patch clamp and cellular electrophysiology. Responsibilities include whole cell patch clamp studies and data analysis as well as documentation of studies and maintenance of cell lines used for experiments. A BS/MS in Biology, Cell Biology or other life sciences and 2+ years of experience with whole cell patch clamp recording are required. Ability to construct voltage protocols and acquire and analyze data using PCLAMP 7 or 8 is preferred. Cell culture skills are desired. **Job Code: PAD/SCJ/SRI/1682HS**

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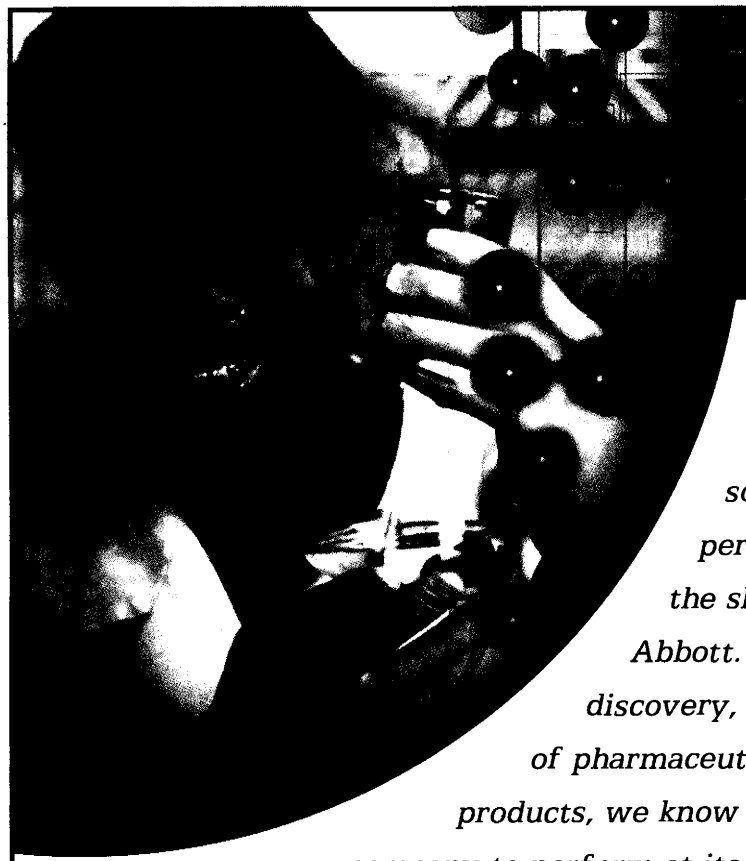

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HUMAN MONOCLONAL ANTIBODIES

Senior Scientist – HuMAbs (2392)

Research Associate – HuMAbs (HM01)

Postdoctoral Fellow – HuMAbs (T-209)

INFORMATION TECHNOLOGY

Science Systems Specialist (3104)

CHEMISTRY

Research Associate – Chemistry (4154)

MOLECULAR & CELLULAR BIOLOGY

Research Associate – Molecular Biology (M & C Bio01)

PHARMACOLOGY

Senior Scientist – Angiogenesis Pharmacology (Pharm03)

Senior Scientist – Immunopharmacology (Pharm06)

Research Associate/Scientist – Immunopharmacology (Pharm04)

Research Associate – Angiogenesis Pharmacology (Pharm01)

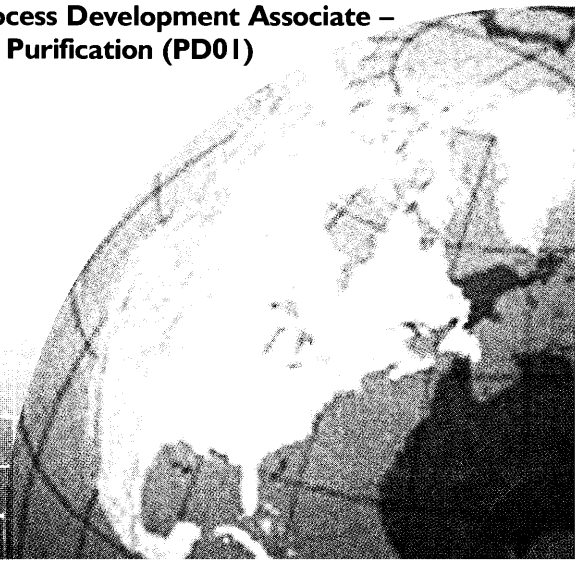
Research Associate – Immunopharmacology (Pharm05)

Postdoctoral Fellow – Immunology/Cytokine Biology (T214)

PROCESS DEVELOPMENT

Senior Process Development Associate – Cell Culture (PD04)

Senior Process Development Associate – Purification (PD01)



ABBOTT LABORATORIES

Quality Health Care Worldwide

Better world.
Better careers.

Principal Analyst/ Scientist Core Technician

As Group Leader for the U.S. part of the DDC-IT group, you will provide the required IT solutions for DDC U.S., as part of the global DDC IT organization, and build bridges between DDC staff, scientists and IT. The group leader will be expected to ensure full coordination and collaboration within the global DDC-IT group, as well as of the local DDC-IT operation. Responsibilities will include the design of system architecture, the elaboration of function and conceptual requirements, system analysis, data and process modeling, design and development of databases, and database and multi-tiered client/server applications. Additionally, you will plan, coordinate, organize and execute the implementation and integration of new systems or system components at the global level, manage IT projects and ensure the close collaboration with staff and scientists in the Drug Discovery Center.

Qualifications include a B.S. degree in Information Technology/ Computer Science (M.S. preferred), with 3-5 years' experience in management of HTS data. Good computer science, software engineering, and development skills and experience in the following areas will be required: Oracle and Microsoft development tools; object-oriented design concepts and programming languages; strong abstraction and system design skills; familiarity with modern system architectures and varied programming techniques and with Activity Base. Previous work experience in a scientific area or a background in a non-IT scientific discipline is an asset. Occasional overseas travel will also be required. **Requisition #10246AD**.

Postdoctoral Fellow

Incumbent will be responsible for the expression, characterization and purification of enzymes involved in co and post-translational modification of proteins, the analysis of cell lineage expression, cell cycle regulation and role of these enzymes in cancer and normal tissue. Additionally, you will be responsible for the characterization of enzyme substrates through cell biology, biochemical, and genetic techniques.

Qualifications include a Ph.D. with experience in protein expression, characterization and purification. Must possess a strong background in mammalian tissue culture, expression of proteins, and enzyme purification, as well as experience in broad range of mammalian cell biology and molecular biology techniques. **Requisition #10682AD**.

ONC Data Miner/Computational Biologist-Sr. Scientist

Working in a multidisciplinary team based environment, incumbent will be primarily responsible for integrating and analyzing genomic and structural information from a variety of therapeutic targets to expedite the design and optimization of novel lead candidates. Hence, the candidate will apply a broad range of computational approaches and data mining strategies to interface bioinformatics analysis with computational chemistry and biological activity. You will apply homology modeling and rational drug design methodology to assess potential "drugability" of in silico screening hits, and to direct additional synthetic efforts related to library iteration. Additionally, incumbent will be responsible with other computational scientists in TA ONC and Novartis Research for evaluating software/hardware packages, and also in creating a cutting edge computational/informatics direction for Novartis that will enhance the drug discovery process.

Qualifications include a Ph.D. or equivalent in Computational Biology, Molecular Informatics, Biophysics or Chemistry, with 2-5 years' of appropriate postgraduate and/or pharmaceutical experience. Must be able to translate theoretical concepts to experimentally oriented scientists and have a clear scientific vision for translating and unifying biological/structural insights with ongoing synthetic efforts as part of an in silico drug discovery continuum. Strong working knowledge of standard computational techniques, commercial software packages, proprietary and public domain molecular databases is highly desirable. Good communication and problem solving skills are essential. **Requisition #10723AD**.

Sr. Scientist (Lab Head)

Incumbent will creatively utilize full range of molecular and cellular approaches and techniques to identify and exploit novel drug discovery targets for cancer therapeutics. Additionally, you will design, perform and interpret experiments and effectively supervise two to three direct reports.

Qualifications include a Ph.D. in Molecular/Cellular Biology or Biochemistry with at least 2 years' of postdoctoral experience, preferably in molecular oncology. Must be able to work in a multidisciplinary setting. **Requisition #10721AD**.

Scientist/Sr. Scientist

We are seeking a Scientist specialized in protein mass spectrometry to be responsible for designing and executing a variety of analyses on proteins and peptides. This will include, but will not be limited to, protein primary sequence analyses/verification, protein post translational modification characterization, MS assays for compound evaluation, protein-ligand binding studies, protein conformation studies, and comparative proteomic analysis using alternative LC-MS techniques in 2D gels.

Qualifications include an M.S. degree with 3-5 years' relevant experience in protein mass spectrometry, or a newly graduated Ph.D. with no more than 2 years' experience. Strong experience in the application of mass spectrometry to protein characterization using MC-MS and MALDI TOF is required. In-depth experience of protein/peptide handling and separation, such as immunoprecipitation, affinity separation, PAGE gel, and capillary electrophoresis is highly desirable. Must possess strong oral presentation and report writing skills. **Requisition #10713AD**.

Our global commitment of $2.5 billion is advancing science through research.

Enter the world of Novartis Pharmaceuticals. Our dedication to R&D is the driving force powering our pharmaceuticals pipeline. And our pipeline is stronger than ever - connecting the world to breakthrough treatments that help people live longer, healthier lives. Today, we're introducing innovative treatments for an ever-increasing variety of diseases and disorders. From Alzheimer's and epilepsy to cancer and Parkinson's. And you could be an integral part of the innovation.

With a global investment of $2.5 billion, we're assembling leading-edge research teams from a broad spectrum of specialties including Functional Genomics, Pharmacogenetics, Oncology, Arthritis and Bone Metabolism, Metabolic and Cardiovascular Disease, Transplantation, Central Nervous System and Infectious Disease. Join our Summit, NJ operation, work with experts in both New Jersey and Switzerland and be the key to tomorrow's discoveries.

Associate Scientist/Scientist

In this role, the primary responsibility will be the performance, under minimal supervision, of *in vitro* molecular and cellular biology experiments in support of drug and target discovery programs. Incumbent will be required to plan experiments, record data, prepare data summaries, draft reports, present results at internal meetings, and to collaborate effectively with other scientists. Additionally, you will also operate and maintain laboratory equipment (including an ABI 377 DNA sequencer), employ methods such as cell culture, DNA cloning, DNA transfection, heterologous expression, PCR, bioinformatics and assays to advance research goals. Ideally, you will be a self-starter, able to work well with others in an open environment.

Qualifications include significant experience in modern molecular biology, to be demonstrated by a suitable academic degree (B.S. and relevant experience or B.S./M.S. in Biological Science or Biochemistry), and/or by contributions to the scientific literature. **Requisition #10639AD.**

Scientist

The candidate will participate in a laboratory that will be developing new models of osteoarthritis, which will be used for both drug evaluation as well as analysis of new molecular targets in OA in collaboration with internal and external activities in functional genomics. You will participate in the histological and immunocytochemical examination of joint tissues to assess the affect of disease modifying agents on joint pathology in osteoarthritis and will be responsible for tissue collection, sectioning, staining and analysis, and for carrying out tissue culture on explants of joint tissue. Sectional analysis will involve the use of both conventional and fluorescence microscopy. There will also be the opportunity to gain experience in antibody purification and the design of new histochemical assays to detect novel drug targets.

Qualifications include a B.S. degree in a biological science and 2-3 years' work experience. Experience with *in situ* hybridation techniques and a working knowledge of tissue culture, Western blotting and ELISA techniques would be an advantage. Should have experience of histological techniques and, ideally a working knowledge of joint morphology, though training will be given. **Requisition #10429AD**.

Scientist (Reg P/T - 8)

As a Reg. P/T.8 employee, the candidate will carry out molecular biology experiments to identify genes directly effecting disease processes. You will be responsible for isolation of DNA and RNA from cells, construction of cDNA libraries for large scale functional analysis, and will also use large scale gene transfer technologies, including retroviral vectors and high throughput functional analysis, to identify genes that modify disease pathways.

Qualifications include a B.S. or M.S. degree and more than 2 years' experience in molecular biology research in industry or academics. Should possess extensive experience in construction of recombinant plasmids and/or cDNA libraries. Experience in mammalian tissue culture and retroviral vectors is helpful. **Requisition #10326AD**.

Scientist

Selected candidate will perform organic chemistry experiments and purification procedures, using standard organic laboratory techniques or new procedures to obtain pure characterized compounds for biological evaluation.

Qualifications include a B.S. degree in Organic Chemistry, (M.S. in Organic Chemistry preferred), a minimum of 2 years' experience in the synthesis and characterization of organic compounds, and experience in the use of chromatography purification systems. Must be familiar with common spectroscopy (NMR, IR, UV, MS) and analytical systems and be able to work effectively on drug discovery teams. **Requisition #10448AD**.

Computer Biologist

Incumbent will play an integral role in the planning and analysis of studies in molecular biology, genomics and genetics, and ensure that the knowledge created will be registered with our global biological knowledge databases.

Qualifications will include an excellent background in biology and fluency in the use of computational methods applied to biology and resources in both intra and internet. Must be a goal-oriented team player with excellent communication skills and be able to translate theoretical concepts to experimentally oriented scientists. Academic education in natural sciences or related area required, preferably with some understanding of metabolic and cardiovascular diseases. Experience with database annotation is an asset, while familiarity with programming languages, relational databases and statistical methods are a plus. **Requisition #10365AD**.

TA Coordinator

The individual will be responsible for all administrative duties for the U.S. DDC program, including financial administrative responsibilities. You will represent the DDC unit on administrative matters, which will include knowledge of policies and procedures on how the company and department operates, as well as utilize various software applications. Financial administrative responsibilities will include: querying corporate accounting databases for cost and budget information; providing current spending reports and budget summaries; providing assistance in planning for future spending and depreciation costs; and working with DDC global planner and U.S. finance to provide information on personnel, capital and operating budgets.

Qualifications include minimum 3 years' experience as an administrative assistant, with 1-2 years' budget planning background. **Requisition #10722AD**.

At Novartis Pharmaceuticals Corporation, we offer excellent compensation and benefits programs that reflect our position as an industry leader. The programs include medical, dental, vision, legal and financial planning services, insurance, 401(k) as well as leadership development initiatives. Open the door to a better career at the epicenter of pharmaceutical discovery.

Please email your resume as a 'Microsoft Word' attachment to **rd@recruitmentsolutions.com** Include in your email message the following information: 1. In the subject area and in the main copy of your email, reference the requisition # (4 digit req #) for sorting purposes. 2. In a brief note or cover letter, indicate where core competencies align with requisition.

As an alternate method of submission, you may fax your resume and cover letter to: 800-343-8850. If you would like to know more about openings available at Novartis, please visit our website at: **www.joinnovartis.com**. We are an equal opportunity employer M/F/D/V. Principals Only.

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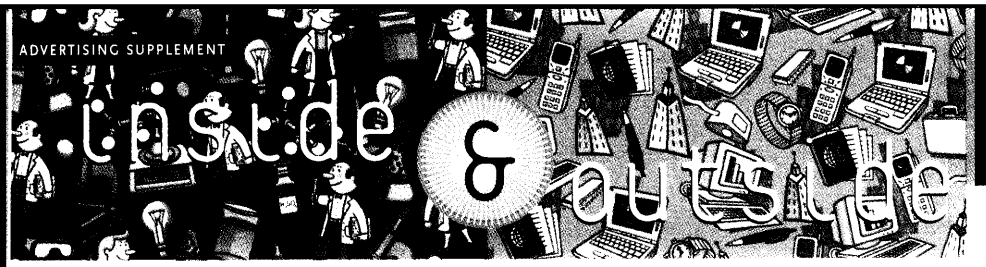


Individuals with B.S. and M.S. degrees in life science, chemistry, or related fields provide the backbone for much of the work in the R&D labs of pharmaceutical firms, biotechnology companies, and chemical suppliers. Those same scientists also have opportunities for satisfying careers outside the laboratory. Jobs in clinical trials, regulatory affairs, sales and marketing, technical assistance, and other fields beckon individuals with non-Ph.D. degrees who want to use their scientific knowledge but don't want to stay at the bench.

The proportion of research sector jobs available to non-Ph.D. scientists has fallen steadily as the number of alternative career paths has increased. Those alternatives promise particular benefits for degree holders who want to remain in science without staying in the lab. Holders of science degrees can also move beyond scientific companies if they wish. Consulting firms and financial organizations such as investment banks now recruit scientists who can apply their investigative and problem-solving skills to areas such as management consulting and evaluation of firms that plan to go public.

A particular piece of good news is the fact that the financial downturn has had little impact, if any, on jobs in life science. The downsizing experienced by the dot-com and information technology sectors has yet to show up in biology and medicine. Few observers expect that situation to change. Indeed, as approaches to drug discovery based on genome sequencing start to bear fruit, demand will increase for scientists at the Bachelor's and Master's levels to join teams involved in clinical trials, regulatory affairs, and sales and service.

Identifying the right area of opportunity doesn't come easily. Academic career advisers, corporate managers of human resources, and scientists in charge of industrial laboratories all advise students to think about their career choices early in their undergraduate days. As a guide to the possibilities try reading *Alternative Careers in Science: Leaving the Ivory Tower*, edited by Cynthia Robbins- Roth (Academic Press, 1993). Students should also start to obtain as soon as possible experience that will serve them in a variety of career options.

A student trying to decide what type of career she or he wants should realize that no choice is cast in stone. Just as technology changes at a rapid pace, so do job options. Today's researcher may well become tomorrow's sales representative. Nor does a job after receiving a B.S. or M.S. degree put a Ph.D. out of range. Students can always return to college to obtain higher degrees, sometimes at the expense of their employers.

Students should continually polish up the basic qualities essential for any career. Those include communication skills —in writing, speaking in person and on the phone, and presentation – and collegiality, a significant factor in a multidisciplinary era. Research experience in undergraduate projects or industrial internships can help to kick-start scientific careers even outside the research laboratory. Don't be afraid to volunteer for projects and to network with academic advisers, college career advisers, recent alumni, and individuals who can act as mentors in the outside world.

As the time for a job search comes closer, students should take a proactive approach. They should do as much detective work as possible on companies and other institutions that interest them as possible job sources. That means checking through web sites, talking to corporate representatives at local career fairs, and even requesting visits to the target firms for informational interviews that will tell the student more about the company and vice versa.

When job interviews finally arrive, students should go into them with confidence born in the knowledge that they have prepared as thoroughly as possible. They should show their enthusiasm for science and for the company they wish to join. And they should do what comes naturally to most sales people: sell themselves and their abilities.

Here we discuss opportunities for holders of B.S. and M.S. degrees with industrial scientists, specialists in human resources, college career counselors, and professional recruiters. They provide insiders' advice on the types of opportunities available and the best ways to prepare to take advantage of them.

→ **Boehringer Ingelheim**

→ **Kelly Scientific Resources**

→ **Northwestern University**

→ **Packard BioScience Company**

→ **Pfizer Discovery Technology Center**

→ **Promega Corporation**

→ **PROTRAN Resources**

→ **University of Rochester**


caswall price

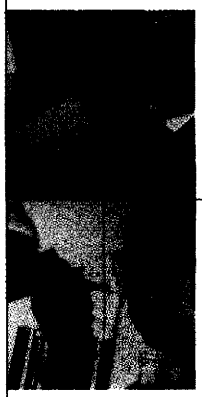
RIDGEFIELD, CONNECTICUT: "We are out there recruiting in all areas," says Caswall Price, corporate academic relations and diversity manager for Boehringer Ingelheim. "We want to find the most qualified B.S. and M.S. candidates for jobs in science and technology as well as in business, finance, and sales and marketing."

Typically, about 40 percent to 50 percent of the company's intake of B.S. and M.S. scientists go into nonbench positions, which include work in information technology. For the laboratory, adds research associate Lori Patnaude, the company seeks scientists for work in high throughput screening and chemistry, particularly combinatorial chemistry.

CONTINUED ⇛

At Boehringer Ingelheim Pharmaceuticals, Inc., knowledge is the capital that inspires novel drug therapies for a broad range of diseases. Our shared knowledge is the inspiration for collaboration in a global scientific community that spans over 60 nations, and the seed of understanding in our pursuit of better medicines. At Boehringer Ingelheim, we reinvest nearly 16% of our revenues into the discovery, development and clinical research efforts of a global team that numbers more than 4,000 scientists and technicians – to gain the knowledge that will bring new therapies to life.

At our Ridgefield, CT campus, we enjoy a cultural climate that embraces change and translates the concepts of innovation, added value, teamwork and efficiency into daily practice throughout the company – to ensure that the knowledge we gain is complete and representative of the best that we can produce. Our success as one of the world's top 20 pharmaceutical companies is the result of the world's best technologies, laboratories and talent working toward a shared goal – that of greater, more beneficial knowledge. That's the true power of your career with Boehringer Ingelheim.



The Power of Knowledge At Work

In Life and In Your Career

Boehringer Ingelheim Pharmaceuticals, Inc., the largest of the U.S. Corporation's subsidiaries, is Boehringer Ingelheim's worldwide Center of Excellence in immunology and inflammatory disease research. Our Ridgefield, CT Research and Development facility has immediate openings in the following areas:

Medicinal Chemistry

Scientists skilled in: Organic Synthesis, X-Ray Crystallography, Molecular Modeling, and Cheminformatics/ Bioinformatics

Biology

BS or MS Level Scientists skilled in: MALDI-TOF Protein Analysis and LC-MS Protein Characterization

Quality Assurance

Individuals with experience in: Computer Systems Compliance with Emphasis on the 21 CFR Part 11 Regulations and E-Submissions

Pharmacology

Ph.D. Level Scientists with interest in: Inflammatory Mechanisms Underlying Asthma or COPD and a background in Cellular and Molecular Biology

Drug Metabolism and Pharmacokinetics

Individuals with extensive experience in: In-Vitro Metabolism Studies

Our 300-acre Ridgefield, CT campus not only offers state-of-the-art scientific facilities, but a beautiful park-like setting in which to meet colleagues. For immediate consideration, please email your resume and salary history to: bipi@bi-careers.com; Or by mail: Boehringer Ingelheim Staffing Center, PO Box 534, Waltham, MA 02454-0534. Please reference Job Code: AD-SCI/BIPI to avoid delays. Diversity is the essence of our work. We are an equal opportunity employer.

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Boehringer Ingelheim

there's a family that lives here.

A global family that's lived on Earth for thousands of years...getting to know the land and the oceans and the sky above...each with the possibility of living longer and healthier through the discovery we, the people of Monsanto, embrace each day. **Monsanto Company** is a leading provider of agricultural solutions to growers and producers worldwide. Monsanto's 14,000 employees provide top-quality, cost-effective and integrated approaches to help farmers improve their productivity and produce better-quality foods.

Molecular Biologist, Chesterfield, MO: *The Insect Control Group* has a position available to conduct research in molecular biology. Successful candidates will join scientists with expertise in molecular biology, plant biology, biochemistry, genetics, and entomology. The selected candidate will be directly involved in the responsibilities for providing new products to the marketplace. Additionally, this individual will be responsible for the development of the Insect Control Technology; innovative input in the design, implementation, analyses, communication and coordination of molecular studies; and applying state-of-the-art techniques to the program. Interaction with a team of molecular biologists and contributing to vector construction, molecular analyses of transgenic plants and project management also required. PhD/MS, in Plant Molecular Biology, with 3+ years of molecular biology laboratory experience and excellent plant biology background a must. Skills needed include competence in cloning, Southern Blots, Northern Blots, PCR, use of modern genomics tools such as microarrays and database mining, strong analytical skills, expression of recombinant protein in bacterial systems. **Respond to: http://respond.webhire.com/job/id?604-r522-J1.**

Molecular Biologist, Chesterfield, MO: *The Biotechnology Roundup-Ready Team* is looking for a talented, highly motivated molecular biologist with the experience necessary to function independently on a cross-functional project. Responsibilities include molecular characterization of transgenic crops in our discovery pipeline and contributing to discovery projects geared toward innovative products. BS or MS degree in Molecular Biology, or a related field; 3-5 years experience working in a molecular biology-based lab; and demonstrated technical skills in nucleic acid manipulation, hybridization, PCR, and cloning required. Critical thinking, innovation, and communication skills are essential as is the ability to work in a team-oriented environment. **Respond to: http://respond.webhire.com/job/id?604-r525-J1.**

Sr. Analytical Chemist, Safety and Stability Studies, St. Louis, MO: *The Formulations Chemistry Analytics Team* has two Ph.D. Scientist Positions Available. The successful candidates will develop and validate analytical methods for safety and stability studies on new products and formulations. Conduct GLP studies in compliance with the requirements of regulatory agencies such as EPA, FDA, etc., to establish safety and stability of new formulations and products in support of Monsanto's Roundup and other chemistry businesses. Carry out the duties and responsibilities of study directors as defined under the GLP guidelines; and develop/validate analytical methods for safety and stability studies on new products and formulations. Ph.D. in Analytical Chemistry, Biochemistry, or related field with a strong background in chromatography, mass spectrometry, spectroscopy, and physical properties measurements required. Demonstrated knowledge and experience in GLP and other regulatory quality management systems a must. Experience in interacting with the regulatory agencies, nationally or internationally, is desired. **Respond to: http://respond.webhire.com/job/id?604-r523-J1 or http://respond.webhire.com/job/id?604-r524-J1.**

Monsanto offers competitive compensation, an attractive benefits package, and an outstanding working environment. For immediate consideration, please respond by our preferred online method utilizing the appropriate URL address above. Or send resume including the specific URL address for the position you are interested in via mail: **Monsanto, Human Resources, Science, 8/3 ad, 800 N. Lindbergh, Mail Zone E3SJ, St. Louis, MO 63167,** fax: **314-694-6554.** Equal Opportunity Employer M/F/D/V

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Please visit the Monsanto website at www.monsanto.com to view all of our job opportunities.

CEREON GENOMICS

Visit our Cereon Website at www.cereon.com to view opportunities at Cereon, a partnership between Millennium Pharmaceuticals and Monsanto. All Cereon positions are located in Cambridge, Massachusetts.

Leading the Way to New Discoveries

Cellomics™

Are you looking for a career where you can make a difference? At Cellomics, Inc., we're ushering in a new post genomic era in drug discovery - the era of the cell. You will play an instrumental part in this unique environment where exciting discoveries are made. As the leading company in creating new cellular knowledge, we're seeking dynamic individuals to be involved in the most cutting-edge technology that the bio-tech industry has to offer.

Cellomics, Inc. is located in Pittsburgh, PA, a city that boasts affordable living options and lots to do for whatever your interests may be. Formerly known as an old steel town, Pittsburgh has emerged to greet the millennium as a thriving corporate center.

Our talented team of professionals enjoy highly competitive compensation, a stimulating environment, and excellent benefits including stock options, tuition reimbursement, bonuses and much more. For immediate consideration, please forward your resume, indicating the job code and your salary requirements, to: **Cellomics, Inc., 635 William Pitt Way, Pittsburgh, PA 15238; Fax: (412) 826-3850 or E-mail: humanresources@cellomics.com**
Equal Opportunity Employer

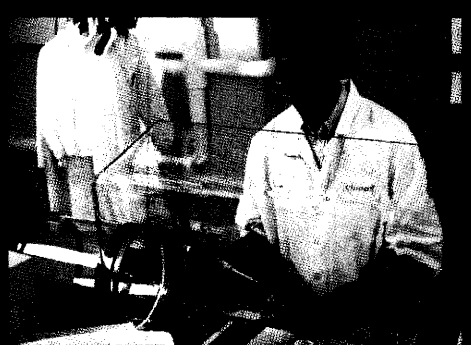
Positions Available

Bioinformatics:
Knowledge Mining Engineer (DH1-SCI)

Life Sciences:
CellChip™ Scientist (RK7-SCI)
CellChip™ Research Associate (ST1-SCI)

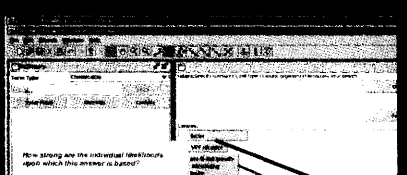
Operations:
Quality Control Scientist (PM1-SCI)
Quality Control Test Engineer (PM5-SCI)

Sales and Marketing:
Field Applications Specialist (MN6-SCI)
Sales Support Specialist (PK2-SCI)
Customer Support Specialist (CM5-SCI)
Field Service Engineer: Zeiss Products (CM6-SCI)
Product Manager, Instrumentation (CJ2-SCI)
Training Specialist (CM7-SCI)



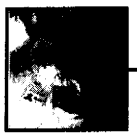
The ArrayScan® II System

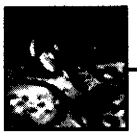
HitKit ™ Assay Kits

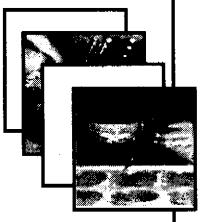


Powerful Bioinformatics and Informatics Tools

Working to help prevent the flu.







Join our growing team and make an impact on your life and the lives of others.
AVIRON, a biopharmaceutical company based in Mountain View, California, currently seeks talented individuals to help fill the following positions:

DEVELOPMENT SCIENTIST (#00825)

Work in assay automation and high throughput screening. Strong managerial and organizational skills are being sought to manage the company's existing assay automation program. Successful candidates will have scientific training in cell-based assays, hands-on high throughput screening experience, or managerial experience in assay automation.

MANAGER, ANNUAL QUALIFICATION & QC SYSTEM (#00708)

Manage and implement systems for the annual development, and release of influenza vaccine. Coordinate with QC, Process Development, Operations, Regulatory and Clinical groups to manage the timelines and systems for the annual qualification process. Modify existing systems and implement additional systems as necessary for optimizing the annual qualification cycle time and for increasing the robustness of the process.

MANAGER, SCIENTIST AFFAIRS (#10610)

Design and manage internal and external collaborative research projects, write scientific position papers, conduct literature reviews, interact with seminar speakers and scientific advisors, and attend scientific meetings. Ability to interact with a variety of functional groups (Research, Development, Regulatory, Clinical, and Marketing).

PROCESS DEVELOPMENT SCIENTIST II (#10204)

Examine and optimize the growth of various viruses in laboratory scale cell culture systems as well as bioreactors. Candidate will be involved in adapting cells to grow in serum-free media and preparing cell banks and may be required to perform downstream processing experiments to increase the yield and purity of the virus preparations.

RESEARCH SCIENTIST II (#10621)

Part of a team that generates novel recombinant parainfluenza virus vaccines. A working knowledge of virus recovery by reverse genetics and negative strand RNA virus biology is desirable. The candidate will also be involved in characterizing the recombinant viruses in vitro and in animal models. The candidate will interact with other department such as process and assay development, regulatory affairs, QA and QC.

SCIENTIST I/II (#10208)

Development of analytical methods to assess physico-chemical properties of virus, and protein/carbohydrate/lipid dependent virus aggregation/inactivation in various formulations. Additional responsibilities may include assay validation and transfer to external laboratories/contract manufacturers, and analytical support for Process Development and Analytical Development groups.

SCIENTIST III (#10227)

Participate in the Pandemic Project funded by NIH and Aviron. Responsible for seed production and final vaccine production. Supervise two Development Associates. Frequent travel required.

SCIENTIST III (#10332/#10341)

Examine and optimize the growth of various viruses in laboratory scale cell culture systems as well as bioreactors. Candidate will be involved in adapting cells to grow in serum-free media and preparing cell banks and may be required to perform downstream processing experiments to increase the yield and purity of the virus preparations. Two positions available.

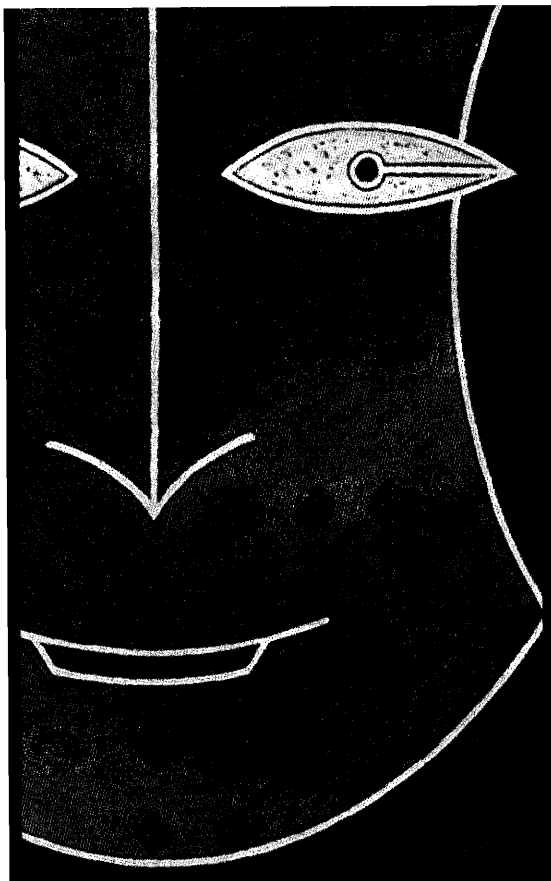
SCIENTIST IV (#00501)

Responsible for process development activities from optimization of virus seeds through virus harvest material. This will include development of optimal and robust processes for production of influenza vaccine in eggs. The position will interface with downstream process development, technical support, formulation development and clinical production groups within process development.

Aviron

Aviron

For above positions, please send resume with job reference number to:
pstevenson@aviron.com, or fax 650-919-6624
We offer a competitive salary and attractive benefits package, including stock options.
To learn more about these, and other positions at Aviron, please visit our website at:
www.aviron.com. EOE



Millennium

Envision the Power of Personalized Medicine

See us at Drug Discovery Technology 2001! We invite you to hear the keynote speech given by Millennium's CEO Mark J. Levin on Tuesday, August 14, at 8:00 am. We look forward to meeting you at the Career Fair on Monday, August 13, to discuss opportunities at our Cambridge, Massachusetts, facilities:

DRUG DISCOVERY

PhD SCIENTISTS

- Leptin Pathway Biology
- In vivo Pharmacology
- Virology
- Protein Mass Spectrometry
- Biological Assay Development
- 2D Gel/High-Resolution Separations Mass Spectrometry
- Cell Culture Engineer
- Sr./Lead Software Engineer, Cheminformatics
- Cancer Pharmacology
- GPCR/Assay Configuration
- Protein Biochemistry

RESEARCH ASSOCIATES

- Metabolic Disease
- Assay Development
- High-Throughput Screening
- Automation
- GPCR
- Protein Sciences
- Metabolic Disease
- Manager, IT/Drug Discovery

DRUG DEVELOPMENT

- Director, Regulatory Affairs
- Director, Quality Assurance
- Director, Antibody Generation & Development
- Associate Medical Director, Clinical Research
- Associate Director, Biological Assay Development
- Associate Director, Metabolic Pharmacology
- Clinical Research Manager
- Clinical Data Manager
- Quality Control Associate
- Medical Writer

Millennium was founded with a vision: to transcend the limits of medicine. We dreamed we could do that by building a new type of company. Now, we are realizing that dream. We are dramatically increasing productivity throughout our "gene to patient" platform. We are developing personalized medicine products. And we are focusing on rapidly moving downstream toward commercialization in three disease areas—oncology, metabolic disease and inflammatory disease. In fact, we've just launched our first product, Campath®, which offers new hope to patients with B-cell chronic lymphocytic leukemia.

Millennium has always been known as a company that can envision a great future. Help us translate that vision into action by emailing only one resume to millennium@rpc.webhire.com. Please include the Source Code SC8301. We are an equal opportunity employer committed to discovering the individual in everyone.

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MILLENNIUM®

Solutions for Genomic Research

Incyte Genomics, Inc., headquartered in Palo Alto, California, is the leading provider of an integrated platform of genomic technologies designed to aid in the understanding of the molecular basis of disease.

Bioinformatics Associate/ Sr. Bioinformatics Associate

You will use all available bioinformatics and sequencing analysis tools to edit EST and genomic sequences to generate full-length genes. Requires a BA/BS or equivalent in Biology or related discipline with 1-year postgraduate experience and familiarity with bioinformatic and sequence analysis tools. Strong communication and computer skills are required. Job Code: TY5559MB

Director of Bioinformatics

You will direct the technical leadership activities of a bioinformatics team in providing support and enhancement of the bioinformatics environment used for implementation, integration, and development of bioinformatics software products. Projects may include cDNA, protein, and genomic database management and the overall bioinformatics architecture. You must have a solid foundation in both bioinformatics and information technology. Requires a PhD in Computational Science or a life sciences field and extensive experience in bioinformatics, including a demonstrated record of achievements and a broad scientific knowledge base. You must be committed to the innovative use of genomics technologies using your knowledge of the science involved, as well as an understanding of modern computer architecture and infrastructure. Job Code: TY05JS

Senior Scientist/Group Leader, Genome Biology

Providing leadership, you will support our gene and "transcriptome" analysis projects using algorithm development for Incyte gene numbers and assessing success rates for full-length laboratory processes. Requires a PhD or equivalent in a biological or computer science with 2+ years experience with UNIX and PERL, as well as excellent programming skills. Job Code: CG5644LS

Patent Agent II/III

You will be accountable for high volume patent prosecution of polynucleotide, polypeptide and gene expression patent applications, including managing a large docket and working with various groups to develop automated processes for incorporation of biological data into new and pending applications. Additional responsibilities may include researching/writing patent applications, working independently and in teams to complete projects requiring extensive bioinformatics-based analysis of sequencing and assessment of patentability. Requires a MS/PhD or equivalent plus equivalent scientific work experience in biochemistry, molecular and cell biology, or biological sciences. You must have a valid registration number from passing the USPTO Patent Bar Exam. Other requirements include 2-3 years biotech patent prosecution experience and a background in biotechnology. Job Code: JAS5303DHC

Research Associate/Sr. Research Associate, Oncology

You will work with a scientist to design and execute experiments that provide information for the validation of molecular targets for cancer therapeutic development. Requires a BS/MS or equivalent in Biology or related field with 2+ years of laboratory experience. You must have experience with the following laboratory techniques: cloning, Taqman, PCR, library screening, tissue culture, Western and Northern blots, immunohistochemistry, and protein purification. Job Code: CG5588PR

Marketing Executive

You will lead the development and execution of business plans, marketing and sales for a new genomics-based database offering in the dynamic new field of predictive toxicology and small molecule lead optimization. Requires an MBA or PhD or equivalent in the life sciences with a minimum 8-10 years demonstrated experience. Job Code: RS6584AL

Key Account Managers, U.S. East Coast

The Key Account Manager will be responsible for generating revenue from the sale of all products and services in assigned territories and key accounts. You must be an expert in Incyte's product lines and their application for pharmaceutical, biotech, and research institution clients. Requires a PhD or equivalent technical experience in the Life Sciences and 5+ years large-ticket ($1MM+) sales experience to pharmaceutical or biotech customers. Must have a proven record of meeting/exceeding aggressive sales quotas. Job Code: JAS5353RH

Director of Product Marketing (Microarrays)

You will ensure the development of quality business/marketing plans that support our organization and are aligned with corporate strategies, coordinate activities across product areas and foster new market opportunities. Requires 5+ years experience in marketing management, preferably in an IT or biotechnology/pharmaceutical industry, and proven leadership in launching a product. An MS or PhD in Business Administration, Engineering or the Life Sciences is preferred. Job Code: RS05SR

Research Associate/Sr. Research Associate, Library Construction

Working within a multidisciplinary team focused on obtaining full-length clones, you will be responsible for high-throughput library screening using PCR, RecA hybridization, and PCR sizing assays. Additionally, you will perform computer data entry and tracking. Requires a BS or equivalent in Biology or related field and 1+ years of laboratory experience with the following techniques: agarose gels, cloning, radioisotope handling, PCR, and hybridization screening. Job Code: CG5686EB

Senior Scientist, Biological Validation

As a key lab leader for validation assays in the Protein Family Based Discovery group, you will supervise one or more laboratory technicians and execute and manage laboratory science efforts. Requires a PhD or equivalent in Cellular or Molecular Biology and experience with one or more *in vitro* disease models. Job Code: CG5698JS

For complete job descriptions and additional openings, please visit our website at **www.incyte.com/company**

To apply, please send a resume/c.v. to science@incyte.com. We offer competitive salaries, an outstanding benefits package and significant opportunities for professional growth. Incyte Genomics Inc. values the talents of our diverse workforce and is proud to be an Equal Opportunity Employer. F/M/V.

IncyteGenomics

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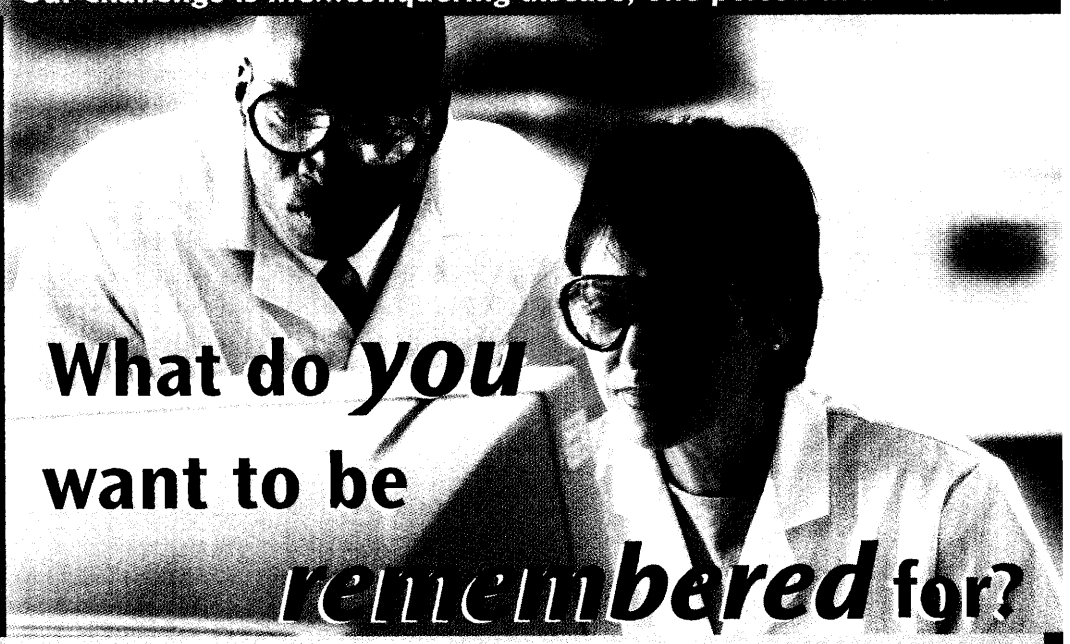
Aventis Pharmaceuticals

Aventis

Our challenge is life...conquering disease, one person at a time.

There are many different things you can do within your life that will leave a lasting impression. One is enhancing the health and well-being of others. By choosing a career with Aventis, you are choosing to reach out to millions and make a difference. With dynamic pharmaceutical products and services, our reputation around the world is that of a leading health care pioneer. We continue to build upon this distinction by attracting individuals who share our passion for innovation and improving the quality of life.



Scientist Job Code: DIA2534

The Drug Metabolism & Pharmacokinetics (DMPK) Department at Aventis Pharmaceuticals is looking for an individual to participate in providing early ADME support to project teams in the lead generation and optimization phases. Candidate will participate on multidisciplinary teams to plan, design, & implement DM/PK experiments to facilitate the selection & refinement of drug candidates. The incumbent is expected to conduct experiments to aid the selection of drug leads, to assist in the identification & understanding of the mechanism for DMPK liability of the drug candidates

Position requires a Ph.D. in chemistry, biochemistry or pharmacology with 1-5 years post-doctoral experience in the study of transporters in the drug absorption & elimination processes. The ideal candidate must be a good team player who can handle multiple priorities & possesses excellent verbal & written communication skills. Experience with molecular biology techniques in expressing specific transporters into cell lines or with in vitro models to study the transport of drugs across the blood brain barrier is highly desirable.

Bioanalytical Scientists Job Code: DIA2251

Responsibilities include but are not limited to providing the following; bioanalytical methods development of drug, metabolites & biochemical activity markers; routine bioanalytical analyses of animal & clinical samples; outsourcing bioanalytical work; identification, feasibility assessment & implementation of new analytical & automation technologies; design & maintenance of LAS & LIMS data systems. Impact of the position is substantial by directly affecting design quality & DIA productivity. This position contributes to most key technical decisions by providing fundamental biochemical data from which product exposure & performance estimates are derived. Leadership & Interfaces: Represents department at CRO's, with consultants as well as on project teams, (either as a member or team leader), LOMT, SRC (US) as needed. Manages all bioanalytical aspects of assigned products. Integrates general as well as product specific development strategies into department plans facilitating compound decisions that impact productivity & design quality. Assures the most appropriate technologies are available to each project team.

Position requires a minimum of 5 years relevant industrial experience & in leading ad hoc technical groups. Must be competent in a wide range of areas including analytical technologies required for small molecules, macromolecules including proteins, immunologic based analytical technologies, HPLC, LC/MS, LC/NMR, robotics as well as integrated database & reporting systems. Advanced technical degree (Ph.D. or equivalent) in chemistry, biochemistry, pharmaceuticals, molecular biology or related fields is required.

Scientist Job Code: DIA2837

Successful candidate will conduct animal studies for cassette dosing, dose preparation, biological sample collection, processing & preparation for bioanalysis & Combi-PK assessment. Will conduct PK studies for lead compounds in 2 or 3 appropriate animal species for candidate selection at the Pre EDC level. PK studies in surgically modified animals (preparing ported animals with special cannulation). Performs tissue distribution/penetration studies (e.g.: blister fluid, CSF, tissue homogenates, etc.). Analytical Non GLP analytical support to Lead Generation, Toxicology & PK/PD studies within the department. Methods development: HPLC, LC/MS/MS, RIA-ELISA, SDS-Gel electrophoresis, Western Blot, PCR, Immunoflourescence, & other receptor binding assays as needed. Measurement of surrogate/biomarkers & other PD markers as necessary. Extensive PK & NonGLP TK data analysis support. Evaluating & establishing PK/PD relationship. Timely preparation & issue of PK, PK/PD & NonGLP TK reports. Functions as a matrix team member within DMPK for various projects. Effective interactions within LASW, eADME, Preclinical PK, & other Lead Optimization & the Lead Generation groups.

Position requires a BS or MS in Biology & 5 years in conducting animal studies/surgery.

Sr. Scientist- Bioanalysis: Molecular Biology & Genomics Respiratory & RA Disease Group

Job Code: DIA2037

Individual will be responsible for analysis of information from gene expression profiling, high-throughput sequencing, and public/proprietary databases for discovery of targets in the inflammatory disease area. This candidate will work closely with scientists in the Respiratory/RA department, Core Biotechnology, & Bioinformatics groups within the organization to identify new targets for downstream validation.

Experience with PERL, Unix, HTML, sequence analysis tools, & sequence databases is required. The ideal candidate has additional experience in the analysis of expression data. Strong communications skills are required. Knowledge of asthma, rheumatoid arthritis, and/or inflammation is desirable.

Apply online at Careers at Aventis, the Aventis Recruitment Center:

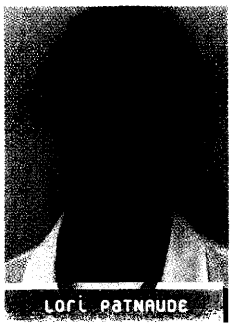
www.aventis.com

(please include job code when applying)

We reward our associates with exceptional benefits including medical/dental, retirement plans, holiday/floating holidays, work/life benefits and the opportunity to learn and grow.

Aventis Pharmaceuticals is proud to be an equal opportunity employer committed to a diverse workforce.

inside outside



Boehringer Ingelheim offers plenty of opportunities for scientists who lack doctorates to move up in the organization. "We have a number of non-Ph.D.s in leadership posts," says Price. "What's most important is the individual's ability to be innovative, creative, and productive and to demonstrate excellent leadership skills."

Price himself illustrates those opportunities. Holding B.S. and M.S. degrees in chemistry, he joined Boehringer Ingelheim in 1990 as a bench scientist. "In 1997," he recalls, "I made a career change to human resources with primary responsibility for recruiting." Now he manages all the company's academic relations – including campus recruiting, promotion of the corporate image on campus, internships, and research collaborations – and its program for attracting and maintaining a diverse work force.

Non-Ph.D. scientists can also climb the laboratory management ladder. "The associate director of our screening group has a Master's degree," says Patnaude. "If you show ability you can move up for sure."

The company offers its scientists the opportunity to gain formal qualifications that will help them to advance. "We strongly believe in an environment of continuous learning," says Price. "We provide 100 percent tuition reimbursement. We have flexible arrangements for those employees who want to improve their ability and help the growth of the company."

To get through the door, recruits must meet strict criteria beyond science degrees. "I look for excellent communication skills, problem-solving skills, leadership ability, and the ability to develop," says Price. "Candidates should have demonstrated critical thinking and an ability to thrive in a teamwork environment." Patnaude points to specific skills for harmonious lab work. "The ability to work in a multidisciplinary situation is very important," she says. "So is the ability to work in a team environment."

In addition the company values exposure to research projects. "We look for well-rounded experience in different types of research, especially in an industrial lab," Patnaude says. "Our interviewers look for a track record in the academic or industrial arena," adds Price. "We look at how applicants accomplished their research thesis or internship. We look for people who take the opportunity to prove themselves."

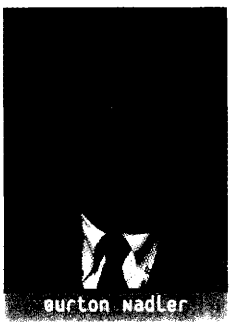
How can scientists impress corporate recruiters? During their degree courses, Price advises, they should start getting to know people in the company, such as representatives at science fairs. "Employers generally consider referrals when trying to fill positions," he explains. "Develop good communication and presentation skills," he continues. "And be ready to tell interviewers why you should be the candidate of choice."

ROCHESTER, NEW YORK: As director of the Career Center at the University of Rochester, Burton Nadler aims to help students in all disciplines to decide what they want in their first jobs and to advise them how to find those jobs. In particular, he says, "I encourage proactive job searches by students who know what they want to do and where to do it. We coach people to take the right steps."

Nadler, who has written books on career opportunities, sees four basic options for life science graduates who don't want to continue their education immediately. They can find work in a traditional R&D lab or diagnostic setting, for a pharmaceutical or biotechnology company. Graduates can also work outside the lab for pharmaceutical companies, in such areas as sales, managing drug regulation, or clinical trials. They can apply their training to a business or consulting environment.

Here, Nadler says, "Majors may not matter. Consulting banks and consulting firms want scientists who can use their knowledge, research skills, and understanding of the scientific method." And graduates who want to spend time outside the ivory tower before returning for medical school or a Ph.D. can take up transition positions, such as teaching at a private school or abroad.

Nadler estimates that perhaps 60 percent of B.S. and M.S. students he advises go initially into laboratory related positions. However, he points out a fundamental truth about the 21st century job market: Scientists continue to have a choice of job options throughout their working lives. "It's important to remember that your first job isn't your last," he says. "The whole scenery is changing."



Similarly, employers emphasize career-long learning more than in the past. "If you're in banking or consulting you'll eventually need an MBA to move up," Nadler says, "On the R&D and diagnostic side people without M.S. or Ph.D. degrees will generally not get to the top positions without added qualifications. The old days of starting on the bench and becoming CEO have gone. You need multiple degrees to move up the chain of command."

To get their feet on the first rung of the ladder, Nadler advises students to take a proactive approach. "I like to say to my students: 'What you say is what you get; tell me your goals.' I don't believe that undergraduates do themselves any good by saying that they'll do anything and waiting for employers to find them."

Not only should students work out what they want in their careers and why, he continues. "It's also important to demonstrate that actions speak louder than words – by doing an industrial internship, for example, or volunteering for special undergraduate research projects. Undergraduates at Rochester can go to faculty members and ask to be

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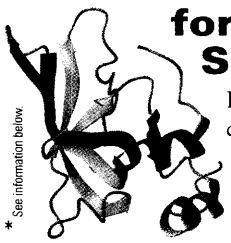
Life Sciences at Missouri

Outstanding Training for Careers in Science



*See information below.

Interdisciplinary collaboration is the cornerstone of life sciences research at the University of Missouri-Columbia (MU). Our research credentials are outstanding: MU is one of only 31 public universities selected for membership in the Association of American Universities and is also designated a Research University I by the Carnegie Foundation. Your doctoral training at MU will include coursework at the frontier of science taught by leaders in the field, who also serve as mentors for doctoral research.

Research facilities at MU support centralized services for protein purification and sequencing, peptide synthesis and recombinant protein expression; automated DNA sequencing and DNA microarraying; monoclonal antibody production and cell sorting; transgenic mice; transgenic plants; confocal and deconvolution microscopy and image processing; scanning and transmission electron microscopy, x-ray crystallography and NMR spectroscopy. The campus is also home to the nation's largest university research reactor. **And**, MU will soon break ground for the construction of a 200,000 square foot, $60 million Life Sciences Center designed for state-of-the-art interdisciplinary research.

Commitment to Student Success

Doctoral student Jeamelia Davis says it best: "I chose MU because the faculty-student interactions seem so relaxed. The faculty members that I talked to seemed really interested in keeping me in the degree program, not just accepting me. It is important to attend a university that has its students' best interests at heart."

A Great Place to Live . . .

MU is located in the center of the I-70 corridor through Missouri — just 2 hours from both Kansas City and St. Louis. Columbia is a vibrant, well-educated community of diverse cultures and is consistently ranked as one of the nation's most livable cities. Missouri is a beautiful state, with recreational opportunities including the sophistication of big cities, the charm of small towns, and outdoor favorites — hiking and biking trails, lush forests, and the clear waters of the Ozark National Scenic Riverways.

*Ribbon drawing of human N-TIMP-1 (PDB code 1d2b) inhibitor of angiogenesis and inhibitor of tumor growth. *Courtesy of Steven Van Doren, MU Dept. of Biochemistry. Published in the Journal of Molecular Biology. January 14, 2000, Vol. 295:257-268.*

an equal opportunity/ADA institution

To request ADA accommodations, please contact our ADA Coordinator at (573) 884-7278 or send e-mail to adawww@missouri.edu.

"The department I chose at MU has a prestigious reputation and I believe that is due to the professionalism of our faculty and student researchers."

Nathan Hancock
Doctoral Fellow in Biochemistry

Doctoral and Postdoctoral Fellowships and Degree Programs

Doctoral degrees are offered in over 30 life science-related departments at MU. A variety of fellowship programs are available which include a competitive stipend, tuition waiver and health insurance. Graduate students in life science departments may also be eligible to participate in interdisciplinary NIH Training Grants. Postdoctoral fellowships are available in many departments and programs, as well.

Life Sciences Fellowships — Doctoral students and postdoctoral candidates may be nominated for these awards by the department to which they apply.
Web: http://www.biotech.missouri.edu/lsfellows • **Phone toll free:** (877) Gene-PhD (436-3743)

Molecular Biology Program NIH Training Grant
Fellowships for outstanding doctoral students planning a career in scientific research.
Web: http://www.biotech.missouri.edu/mbp • **Phone toll free:** (877) Gene-PhD (436-3743)

NIH Minority Biomedical Researchers Training Initiative — Awards for underrepresented minority students to train as future researchers in biomedical sciences.
Web: http://web.missouri.edu/~gradschl/financial/mbrti/mbrti.htm • **Phone:** (573) 882-4397

Departmental fellowships — A sampling of life science degree programs and contact information can be found below. For information about other departments and general campus information, visit the MU homepage at **http://www.missouri.edu**. The **MU Minorities in Science** website is also a great resource at http://www.biotech.missouri.edu/mbp/minority.

Biochemistry
Web: http://www.biochem.missouri.edu • **Phone toll free:** (800) 647-2414

Biological Sciences
Web: http://www.biology.missouri.edu • **Phone toll free:** (800) 553-5698

Genetics Area Program
Web: http://www.biotech.missouri.edu/genetics • **Phone toll free:** (877) Gene-PhD (436-3743)

Molecular Microbiology & Immunology
Web: http://www.missouri.edu/~mmiwww • **Phone:** (573) 882-8152

Pharmacology
Web: http://www.muhealth.org/~pharmacology • **Phone:** (573) 882-7188

Physiology
Web: http://www.missouri.edu/~physiwww • **Phone:** (573) 882-4957

Plant Sciences Unit (Agronomy, Entomology, Horticulture, Plant Microbiology & Pathology)
Web: http://www.psu.missouri.edu

Veterinary Pathobiology
Web: http://www.cvm.missouri.edu/vpbio/index.html • **Phone:** (573) 882-6628

"It is important to attend a university that has its students' BEST INTERESTS AT HEART."

Jeamelia Davis
Doctoral Fellow in Biological Sciences

opportunity *clicks*

http://www.training.nih.gov

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and postdoctoral fellows.

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biomedical research institution.

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Bethesda, Maryland
20892-0240

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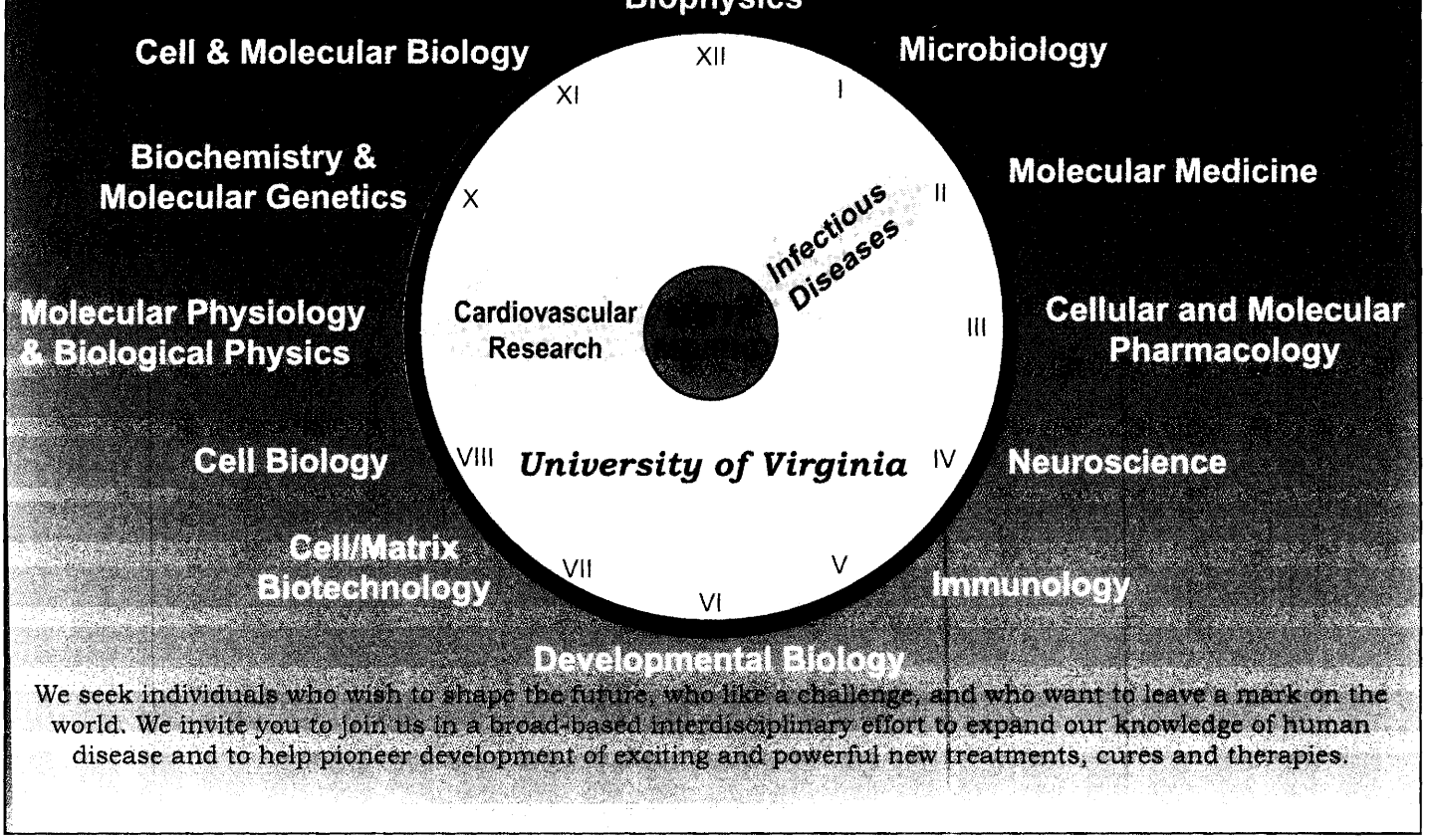
The NIH is dedicated to building a diverse community in its training and employment programs

If You've Got the Time, We've Got the Science

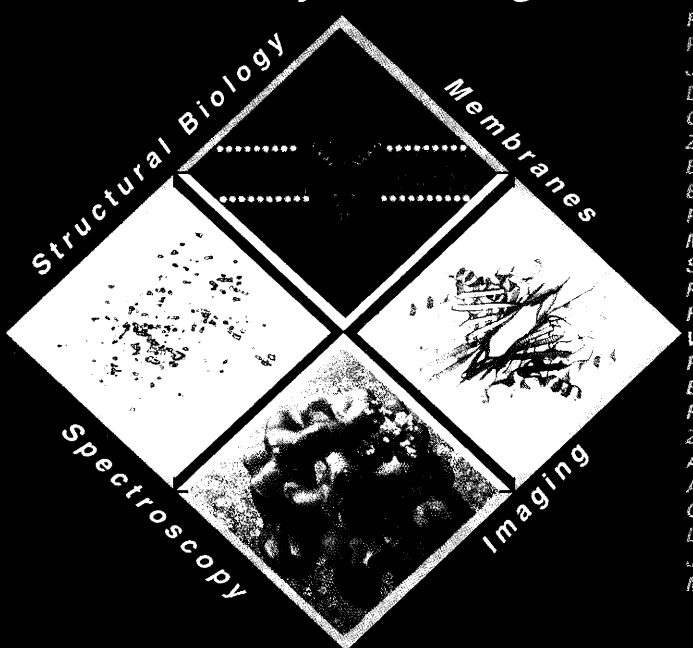


We seek individuals who wish to shape the future, who like a challenge, and who want to leave a mark on the world. We invite you to join us in a broad-based interdisciplinary effort to expand our knowledge of human disease and to help pioneer development of exciting and powerful new treatments, cures and therapies.

Interdisciplinary Ph.D. Program

BIOPHYSICS

University of Virginia



Biophysics Faculty at the University of Virginia

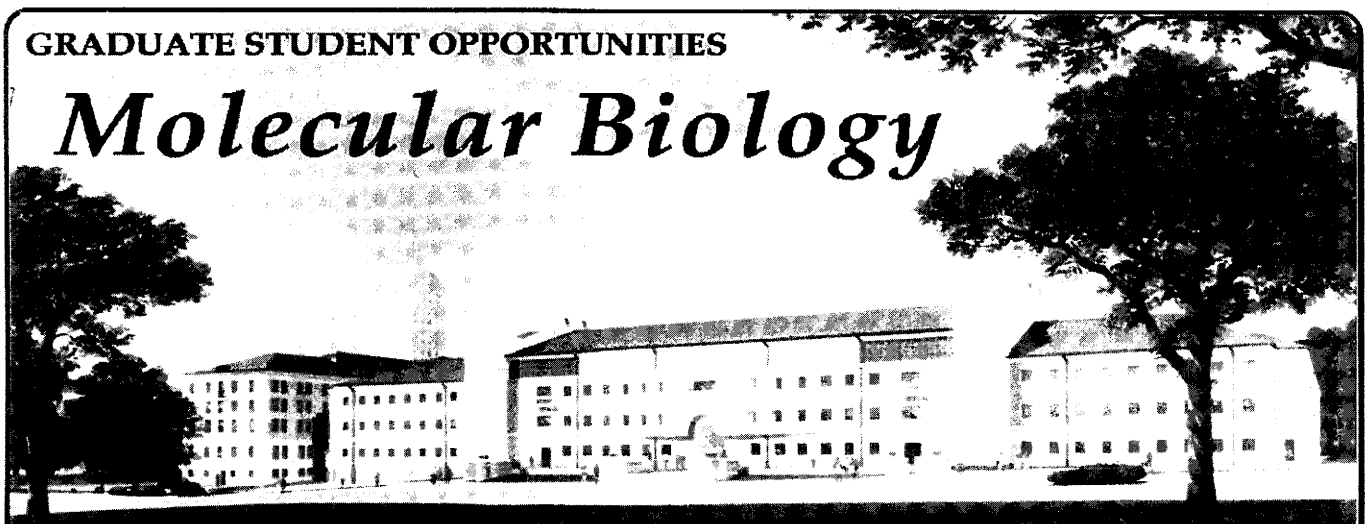
R. Biltonen: Thermodynamics of membrane interactions
R. Bryant: Molecular dynamics and magnetic relaxation
J. Bushweller: Protein structure by NMR spectroscopy
D. Cafiso: Protein-membrane interactions; EPR spectroscopy
C. Creutz: Basic mechanisms of exocytosis
Z. Derewenda: Protein structure by X-ray diffraction
E. Egelman: Structure of macromolecular assemblies
E. Fernandez: Interactions of pharmaceutical proteins
R. Ford: Bacterial migration and adhesion
M. Johnson: Computer modeling of biophysical processes
S. Khorasanizadeh: Protein structure by NMR spectroscopy
R. Kretsinger: Structure and evolution of proteins
H. Kutchai: Mechanism of the sarcoplasmic Ca2+-ATPase
W. Minor: X-ray diffraction methodology
R. Nakamoto: Mechanism of the FOF1-ATP synthase
E. Perozo: Structure of ion channels by EPR spectroscopy
F. Rastinejad: X-ray crystallography of nuclear hormone receptors
Z. Shao: High-resolution imaging; scanned probe microscopy
AP. Somlyo: Compositional imaging in smooth muscle
AV. Somlyo: Signal transd. and myosin kinetics in smooth muscle
G. Szabo: Receptor-mediated regulation of ion channels
L. Tamm: Structure and interactions of membrane proteins
J. Tuttle: Mechanisms of neural death
M. Wiener: X-ray crystallography of integral membrane proteins

www.med.virginia.edu/biophysics

medgpo22@virginia.edu

GRADUATE STUDENT OPPORTUNITIES

Molecular Biology



The University of Texas at Austin

We invite you to join the dynamic Graduate Program in Molecular Biology at The University of Texas at Austin. This multidisciplinary program provides a highly interactive, supportive environment with many opportunities to participate in cutting edge research in over 90 laboratories. Faculty research interests cover a wide gamut: cell and developmental biology, molecular genetics, chemical biology, structural biology, neurobiology, cancer biology, immunology, virology, nutrition, rational drug design, bioinformatics, molecular evolution, bioengineering, biophysics, and more.

UT Molecular Biology graduate students are well funded and receive intensive training through a core curriculum, small seminar courses and access to a variety of seminar speakers. Each student may choose to conduct thesis research in the laboratory of any one of the participating faculty members. The program's cornerstone, the Institute for Cellular and Molecular Biology, was established to expand and foster the development of molecular biology at The University of Texas at Austin.

Over the past two years, the Institute has hired over 19 new faculty, in association with University academic departments. ICMB is centered in the new 150,000 square foot Molecular Biology Building. It supports state-of-the-art laboratories, staffed core facilities for nucleic acid sequencing and synthesis, peptide sequencing and synthesis, flow cytometry, electron, deconvolution and confocal microscopy, molecular modeling, graphics, computing and mouse genetic engineering.

The University of Texas is centrally located in Austin, which is nestled in the beautiful and rugged Texas hill country. Austin recently ranked second nationally in Money magazine's "Best Places to Live."

For more information, please visit our Web site:
www.esb.utexas.edu/molbio/
You may also write or call:

Graduate Program in Molecular Biology
The University of Texas at Austin
Molecular Biology Building
Austin, Texas 78712
512-471-2150

Postdoctoral opportunities also exist. Inquiries for these positions should be directed to individual faculty members or to:

Institute for Cellular & Molecular Biology
The University of Texas at Austin
Molecular Biology Building
2500 Speedway
Austin, Texas 78712

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

UNIVERSITY OF CALIFORNIA
RIVERSIDE

THE CENTER FOR PLANT CELL BIOLOGY IN THE UCR GENOMICS INSTITUTE

The University of California is launching a new center for Plant Cell Biology in the Genomics Institute. Recruitment of the following positions is part of this new initiative, and continued growth in this area is expected with additional faculty positions to follow. The Director of the UCR Genomics Institute is Dr. Michael T. Clegg and the Director of the center for Plant Cell Biology is Dr. Natasha Raikhel.

Faculty Position in the Center for Plant Cell Biology

The Department of Botany and Plant Sciences invites applications for an ASSISTANT or ASSOCIATE PROFESSOR in plant cell biology. The candidate will join the new center for Plant Cell Biology (CEPCEB) and an active and collegial department with broad interests in plant biology. Individuals should work at the forefront of contemporary plant cell biology and utilize a multidisciplinary approach in an area such as, but not limited to, cell cycle regulation, cell wall and/or cytoskeleton dynamics and function, programmed cell death, protein targeting, or signal transduction. The successful candidate will be expected to establish and maintain a vigorous, innovative research program, have a strong commitment to excellence in teaching at the undergraduate and graduate levels, and participate in departmental and interdepartmental graduate programs. The position includes an appointment in the Agricultural Experimental Station and will be available July 1, 2002. Applicants must hold a PhD, and postdoctoral experience is essential for candidates at the assistant level. CEPCEB is part of the Institute of Genomics with excellent state-of-the-art facilities and technical support. Scheduled expansion of CEPCEB includes another assistant professor of plant cell biology to be recruited within the next year.

Review of faculty applications will begin November 1, 2001 and continue until the position is filled. Interested individuals should: (1) submit a curriculum vitae, (2) provide a statement of research interests, and (3) have letters from three references sent (assistant level) or provide names and addresses of three references (associate level) to: Dr. Eugene Nothnagel, Chair, Department of Botany and Plant Sciences-072, University of California, Riverside, CA 92521-0124. For additional information about the Department and campus visit: www.cnas.ucr.edu.

Academics Coordinator II
Bioinformatics Facility

The center invites applications for an ACADEMIC COORDINATOR II, an academic career-track 11-month appointment. The successful applicant will be expected to organize a small bioinformatics team to provide support to the center for Plant Cell Biology. This team will implement currently available bioinformatics tools including relational database support and will develop user-specific data-mining tools. The appointee will be expected to develop research collaborations with the faculty and teach or organize short courses that will inform the local community about the available bioinformatics resources. Applicants must have a PhD in the Biological Sciences (Plant Biology is preferred). Applicants with experience in leading a bioinformatics group will be given preference. Additionally, the applicant must be proficient in one or more programming languages (PERL, PYTHON, JAVA, C++) and have a good understanding of database design and implementation. In addition, applicants should have experience using one of the open source bioinformatics frameworks such as BIOJAVA or BIOPERL. The applicant should have experience with software collaboration tools such as CVS. The applicant will be expected to oversee the purchase, installation, and management of the necessary computer hardware and software required to provide bioinformatics support to several users. A good understanding of the UNIX operating system and systems administration is also an important qualification. The Academic Facilities Coordinator will be responsible for supervision, maintenance and operation of facilities at the institute and will also provide leadership in organizing occasional short course offerings.

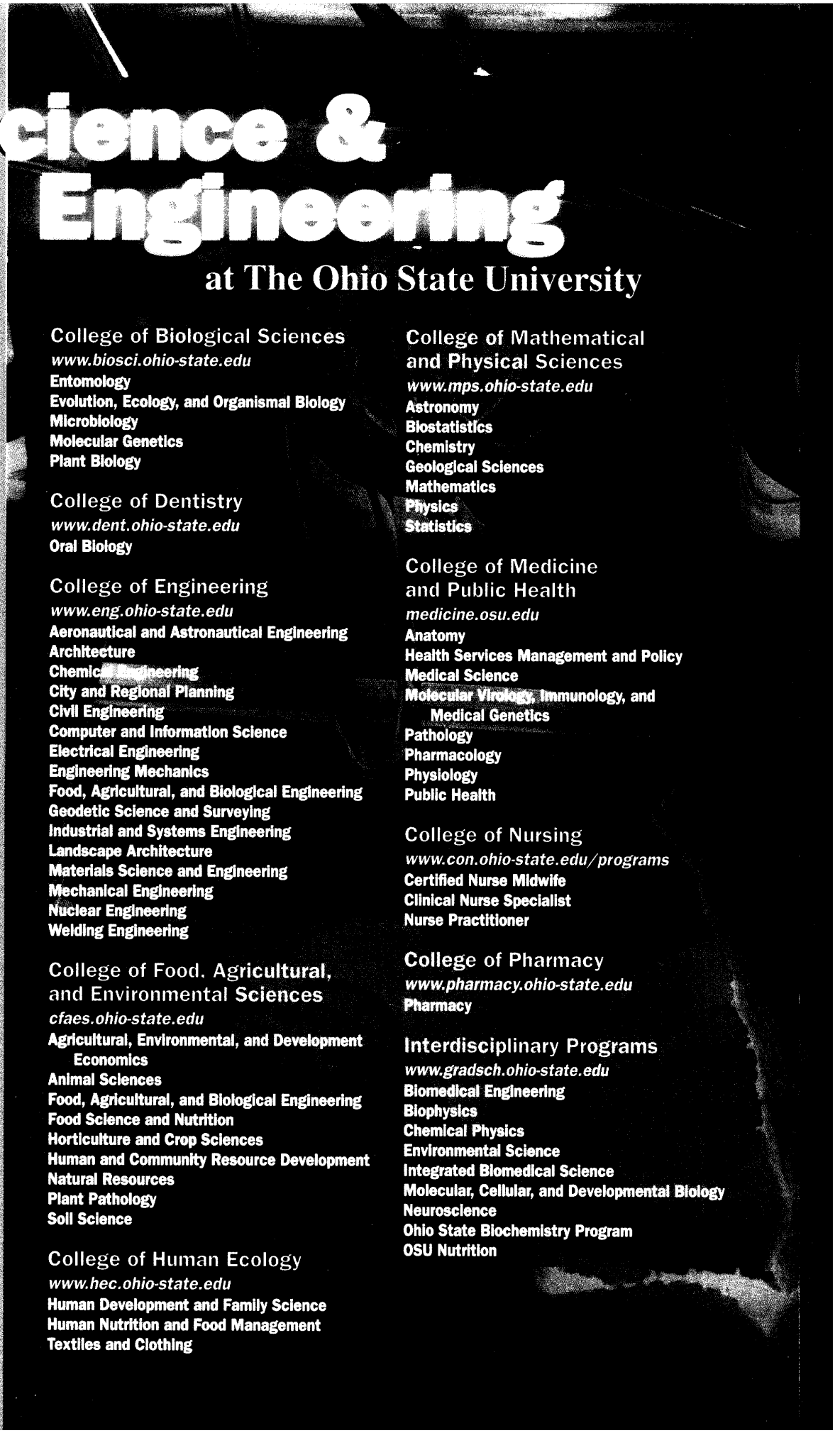
Academics Coordinator II
Core Imaging and Microscopy Facility

The center invites applications for an ACADEMIC COORDINATOR II, an academic career-track 11-month appointment. The successful applicant will be expected to plan and organize all functions of the microscopy instrumentation facility, including establishment of workflow and procedures, selection and supervision of facility staff, and involvement in significant research collaborations with faculty members. The appointee will work closely with the director of the institute and of CEPCEB to identify instrumentation needs and to seek funding for new equipment. He or she will assist and advise faculty, students, and others in appropriate use of facilities. Applicants must have a PhD in the Biological Sciences (Plant Cell Biology is preferred) and experience in confocal microscopy and in a wide variety of microscopic techniques. Experience with deconvolution is preferred. The appointee would be expected to take the initiative in evaluating and adapting new imaging and microscopy techniques and methods. Oversight responsibility could include supervision of sample preparation for electron microscopy. An important aspect of this job is an awareness of the most recent advances in the field, including state-of-the-art professional and technical knowledge and innovation, and knowledge of equipment maintenance and repair. Additional requirements include abilities to supervise staff and to interact effectively with faculty, students, post-doctorates, and others. The Academic Facilities Coordinator will be responsible for supervision, maintenance and operation of facilities at the institute and will also provide leadership in organizing occasional short course offerings.

Review of academic coordinator applications will begin October 1, 2001 and will continue until the positions are filled. Salaries for the positions are commensurate with education and experience. The positions will be available January 1, 2002. Letter of application, including a curriculum vitae and three letters of reference, should be sent to: Amy Corley, Institute of Genomics, c/o Botany and Plant Sciences, University of California, Riverside, CA 92521-0127. For additional information about the College of Natural and Agricultural Sciences visit: www.cnas.ucr.edu.

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

Graduate Programs in Science & Engineering at The Ohio State University



College of Biological Sciences
www.biosci.ohio-state.edu
- Entomology
- Evolution, Ecology, and Organismal Biology
- Microbiology
- Molecular Genetics
- Plant Biology

College of Dentistry
www.dent.ohio-state.edu
- Oral Biology

College of Engineering
www.eng.ohio-state.edu
- Aeronautical and Astronautical Engineering
- Architecture
- Chemical Engineering
- City and Regional Planning
- Civil Engineering
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- Engineering Mechanics
- Food, Agricultural, and Biological Engineering
- Geodetic Science and Surveying
- Industrial and Systems Engineering
- Landscape Architecture
- Materials Science and Engineering
- Mechanical Engineering
- Nuclear Engineering
- Welding Engineering

College of Food, Agricultural, and Environmental Sciences
cfaes.ohio-state.edu
- Agricultural, Environmental, and Development Economics
- Animal Sciences
- Food, Agricultural, and Biological Engineering
- Food Science and Nutrition
- Horticulture and Crop Sciences
- Human and Community Resource Development
- Natural Resources
- Plant Pathology
- Soil Science

College of Human Ecology
www.hec.ohio-state.edu
- Human Development and Family Science
- Human Nutrition and Food Management
- Textiles and Clothing

College of Mathematical and Physical Sciences
www.mps.ohio-state.edu
- Astronomy
- Biostatistics
- Chemistry
- Geological Sciences
- Mathematics
- Physics
- Statistics

College of Medicine and Public Health
medicine.osu.edu
- Anatomy
- Health Services Management and Policy
- Medical Science
- Molecular Virology, Immunology, and Medical Genetics
- Pathology
- Pharmacology
- Physiology
- Public Health

College of Nursing
www.con.ohio-state.edu/programs
- Certified Nurse Midwife
- Clinical Nurse Specialist
- Nurse Practitioner

College of Pharmacy
www.pharmacy.ohio-state.edu
- Pharmacy

Interdisciplinary Programs
www.gradsch.ohio-state.edu
- Biomedical Engineering
- Biophysics
- Chemical Physics
- Environmental Science
- Integrated Biomedical Science
- Molecular, Cellular, and Developmental Biology
- Neuroscience
- Ohio State Biochemistry Program
- OSU Nutrition

THE OHIO STATE UNIVERSITY

For further information, contact:

The Ohio State University
Graduate School
247 University Hall
230 North Oval Mall
Columbus, OH 43210-1366
(614) 292-6031

www.gradsch.ohio-state.edu

included in research teams. Students who do this are the ones who stand out."

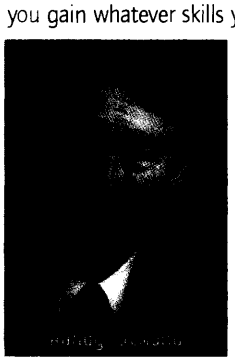
Communication skills are equally important. "Students," Nadler says, "must be bilingual in science and English or even trilingual – in science, English, and business."

MADISON, WISCONSIN: Promega Corporation, a broad-based supplier of reagents and other products for life scientists, employs individuals with B.S. and M.S. degrees throughout the organization. "People who haven't been in industry tend to have the feeling that B.S. and M.S. scientists are only for the laboratory, but we have a lot in technical services, sales and marketing, regulatory affairs, and production," says vice president and chief technology officer Randy Dimond. "Typically from 25 percent to 40 percent of personnel in various areas have Bachelor's level degrees in biological and chemical sciences. About 10 percent to 25 percent have Master's degrees, mostly in the sciences."

Promega doesn't restrict itself to hiring biologists and chemists. "We're seeing a lot of interaction between life science and other fields," Dimond says. "Our integrated solutions, such as automating entire processes on robotic systems, require people with diverse backgrounds working with each other in teams. We'll look for chemical engineers, software engineers, and instrumentation engineers as well as scientists."

Current recruiting focuses on nonlaboratory jobs. "We have open positions for technical services scientists, production scientists, and document specialists in the quality assurance area," says Michelle Venturini, a training specialist in human resources. "There are many opportunities in R&D and in marketing," adds Dimond.

Individuals with B.S. and M.S. degrees have plenty of chances for advancement. "We take into consideration the background and training of people when we hire them," says Dimond. "But once they're on board we don't focus on what their degrees are. Our message to our employees is: If you gain whatever skills you have and develop your talents, no position is out of range to you. Our chairman and CEO has a B.S. as his highest degree. Our vice president of quality assurance and regulatory affairs was hired into R&D with a Master's degree in biochemistry 12 years ago from another company where he had experienced a ceiling. And our director of marketing for custom manufacturing has a Master's degree."



The company provides tuition assistance for individuals seeking higher qualifications. "We have paid for a number of people to get M.B.A. degrees," says Dimond. "We have several professional development opportunities for scientists," adds Venturini. "They can take sabbaticals and leaves of absence for teaching and academic appointments."

Promega pays great attention to applicants' communication skills. "Even if I'm a bench scientist I have to have the ability to communicate with my team and my supervisors," says Dimond. "But if I aspire to be a group leader, verbal and written skills and the ability to communicate concisely and accurately are keys to success."

Dimond's advice for job seekers: "Get to know companies out there, particularly by looking at their websites. Even if you don't see a job that you want there, make contact and make us aware of you. And bear in mind that you can get to the place you want by starting somewhere different. When positions open up we give preference to people who are already in our company."

TROY, MICHIGAN: Kelly Scientific Resources (KSR) supplies its clients worldwide with contract scientists of all types, from entry level technicians to senior researchers, who take temporary and permanent positions in industry. The six-year-old company acts as the employer of record and aims to keep scientists on its books long term. "Our objective is to work with them throughout their careers," says vice president Peter Brixius. "We also employ and place many senior level managers, primarily with B.S. and M.S. degrees."

Life science plays a major role in KSR's business. "The biological side represents about 60 percent of the demand for our services. Jobs include immunology, bioinformatics, and general life science research," Brixius says. "We also serve major chemical suppliers and food science and environmental companies. A couple of our most successful units provide scientists for clinical trials." About 75 percent to 80 percent of life scientists go into laboratory jobs, Brixius notes.

KSR guides the working lives of the scientists it contracts out to its clients. "We help groom them so that they can become successful in their careers," Brixius says. "We think that we offer them entrees to hundreds of companies without their having to set up the relationships. We are very employee- and client-focused."

As part of its service to its clients and scientists, Kelly offers online distance learning courses in several relevant topics. The company will soon make available an accredited course in biotechnology. "The course work will be aimed at biochemistry and microbiology professionals with M.S. and B.S. degrees, " says Brixius. "It will be part of their standard course work as they aim their careers toward biotechnology."

Brixius takes pride in Kelly's selection of contract employees. "That is

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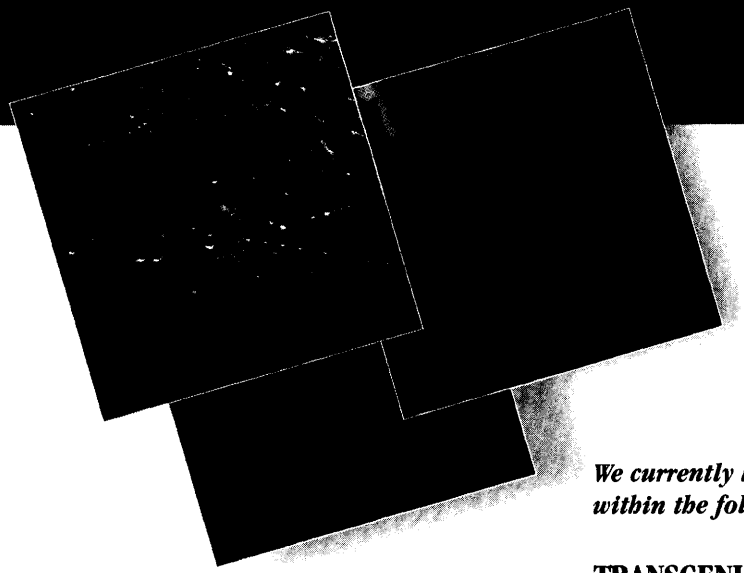
The Science of Innovation



Regeneron is a biopharmaceutical company that discovers, develops, and intends to commercialize therapeutic drugs for the treatment of serious medical conditions. Our platform technologies include Targeted Genomics™, Functionomics™, and Designer Protein Therapeutics™. In addition to our rich product pipeline, we have cutting-edge basic discovery research programs focused on areas such as: muscle, bone, cartilage, fibrosis, genomics, cytokines, inflammation, and angiogenesis.

Regeneron is a company founded on the belief that talented scientists with the right resources can achieve outstanding results. We are dedicated to finding the most highly qualified individuals and providing them with a creative, energetic environment where new ideas and innovation can flourish.

To apply please submit your resume, referencing appropriate Web site job code, to:

Regeneron Pharmaceuticals, Inc.

777 Old Saw Mill River Road,

Tarrytown, NY 10591

Fax: (914) 345-7790

E-mail (text or .pdf format only):

jobs@regpha.com

EOE, M/F/D/V.

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MICROBIOLOGY/PROCESS COMPLIANCE
PILOT PLANT MANUFACTURING
CELL CULTURE/MEDIA DEVELOPMENT

VALIDATION

RESEARCH PROGRAM MANAGEMENT
TECHNOLOGY TRANSFER

In addition to the above areas, we have a number of open positions throughout our organization. To learn more about Regeneron's remarkable projects and our extraordinary opportunities, visit ***www.regeneron.com.***

REGENERON
Pharmaceuticals, Inc.

www.regeneron.com

Taking our lead from nature, Genencor International creates biocatalytic proteins and biomaterials for a wide variety of applications in the healthcare, agriculture and industrial/consumer chemical markets. As a diversified biotechnology company, our proprietary *i*-biotech™ approach uses integrated technology platforms to deliver innovative solutions to our customers rapidly and cost-efficiently. With 250 products and over $300 million in sales, we're working to make safer, more effective drugs and more powerful cleaning products. We're also enabling the efficient production of chemicals and are working on new breakthroughs to advance "green chemistry" as well as fuel the world of the future. To get us there, we are seeking more talented professionals who—like us—are innovative by nature.

Scientist II, Immunology/Cell Biology

Join efforts to develop novel animal models and techniques for infectious diseases and cancers. Requires a PhD or equivalent in Immunology, Cell Biology or related field with 2-4 years of research experience in animal modeling, transplantation, cell proliferation and cytotoxicity assays, and flow cytometry. Source Code: PA-39N-01SCI

Sr. Scientist, Inflammation

Lead efforts to identify leads for drug development by understanding the biochemical basis of inflammation, identifying drug targets, developing assay systems and screening appropriate combinatorial libraries. Requires a PhD in Biochemistry or related field, 5-8 years of research experience and skills to lead an interdisciplinary team. Source Code: PA-42N-01SCI

Sr. Scientist, Cancer Pharmacology

Lead discovery efforts for novel cancer therapeutics by developing *in vitro* cellular and/or organ culture assays and animal systems to study cell biology and secondary testing of compounds from our protein therapeutic and small molecule inhibitor programs.Requires a PhD or equivalent in Pharmacology or related field and 5 years experience in a biotech/pharmaceutical company. Source Code: PA-43N-01SCI

Sr. Scientist, Inflammation Pharmacology

Lead efforts in the discovery of novel therapeutics for inflammation by developing *in vitro* cellular and/or organ culture assays and animal systems suitable for the study of cell biology and secondary testing of compounds from our protein therapeutic and small molecule inhibitor programs. Requires a PhD or equivalent in Pharmacology or related field and 5 years experience in a biotech/pharmaceutical company. Source Code: PA-44N-01SCI

Sr. Scientist, Bioinformatics

Lead 4-6 scientists in identifying and implementing appropriate computational and database tools to manage, analyze and integrate information arising from public and proprietary DNA sequencing projects, DNA microarray and proteomics experiments, pathway analysis modeling, and protein structure determination and modeling. Requires a PhD or equivalent in Molecular Biology or Bioinformatics and 5-8 years of experience in bioinformatics. Source Code: PA-53R-01SCI

Sr. Scientist, Protease

Lead efforts to identify novel drug candidates using knowledge of the role of proteases and protease inhibitors in diseases, develop assay systems and screening appropriate for combinatorial libraries. Requires a PhD in Biochemistry or a related field, 5-8 years of research experience in proteases/protease inhibitors. Source Code: PA-45N-01SCI

Scientist II, Directed Evolution/Molecular Biology

Manage and expand our portfolio of methods for generating random or semi-random libraries using your hands-on knowledge of molecular biology techniques with emphasis on library construction and high throughput approaches. Requires a PhD in Molecular Biology, Enzymology, or related field and postgraduate experience in areas such as applied molecular evolution, phage display, and protein engineering. Source Code: PA-59N-01SCI

Scientist II, Directed Evolution/Enzymology

Responsible for establishing biochemical assays and characterizing isolated mutant proteins. Requires a PhD in Biochemistry, Enzymology, or related field and postgraduate experience in areas such as protein engineering, applied molecular evolution or phage display. Source Code: PA-60N-01SCI

For a complete listing of these job opportunities and more,
visit our website at

www.genencor.com

As one of the top biotechnology companies in the world, Genencor offers an informal, highly creative work setting in which high team spirit, open communication and environmental responsibility are considered company hallmarks. Our competitive compensation and benefits package features a generous 401(k) matching plan, stock options, and a retirement plan. For consideration, please submit your resume/cv, indicating appropriate Source Code, to: Genencor International, Inc., 925 Page Mill Road, Palo Alto, CA 94304-1013, Fax: (650) 845-6500, email: hr@genencor.com. Background checks will be conducted. An equal opportunity employer M/F/D/V.

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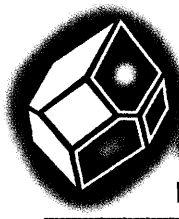

3-Dimensional Pharmaceuticals, Inc.

BETTER PHARMACEUTICALS BY DESIGN®

3-Dimensional Pharmaceuticals, Inc. is a post-genomics drug discovery company which has developed DiscoverWorks™, a proprietary technology platform uniquely integrating structure-based drug design, combinatorial chemistry, and high-throughput screening for the cost-effective discovery of novel pharmaceuticals. Our growth and success depend on each member of our dynamic team working together to advance medical science through the discovery of novel drug therapies.

Discovery Biology - Director/ Assistant Director, GPCR Pharmacology

Pharmacology, Molecular/Cellular Biology, Biochemistry or a related field with 4+ years experience in drug discovery. Will lead cross-functional research teams responsible for preclinical lead identification/optimization involving G-protein coupled receptor (GPCRs) and related targets. Will have a major role in target identification/validation and develop a leadership position in an expanding drug discovery organization. Significant publication record required. **Job code: BCM100**

Discovery Biology - Molecular and Cellular Pharmacology (Ph.D./M.S./B.S.)

Expertise in one or more of the following areas: molecular biology, receptor pharmacology, cellular physiology, signal transduction, assay development, protein biochemistry. Will join multidisciplinary teams working to develop novel small molecule therapeutic agents directed against relevant genomic targets (e.g., Oncology/Cardiovascular/Metabolic/ Inflammatory/CNS Diseases). **Job code: BCM101**

Discovery Biology - Molecular Biology/ Protein Expression (Ph.D./M.S./B.S.)

2+ years experience in molecular biology and recombinant protein expression, including prokaryotic and baculovirus-based insect cell expression systems. Familiarity with protein purification methods a plus. Will become integral members of outstanding, cross-functional drug discovery teams. **Job code: BCM102**

Discovery Biology - Enzymology (M.S./B.S)

Candidates should have at least one year industry experience in enzymology/biochemistry/assay development. Participation in multidisciplinary teams expected. **Job code BCM103**

GPCR Biochemists and Pharmacologists (Ph.D./M.S./B.S.)

Minimum of 2 years experience working with membrane proteins and demonstrated expertise working with G-protein Coupled Receptors. Will join a multidisciplinary team working to elucidate the structure and function of G-protein coupled receptors (GPCRs). Expertise in more than one of the following areas: ligand-receptor binding interactions and assays, GPCR function, receptor pharmacology, GPCR high-throughput screening, membrane protein purification, protein and lipid biochemistry and spectroscopic characterization of proteins. More senior level candidates are also encouraged to apply for leadership positions in the same area. **Job code: BBS100**

Fermentation and Cell Culture Specialists (Ph.D./M.S./B.S.)

Minimum of 2 years experience in one or more of the following fields related to recombinant protein expression: E. coli and yeast fermentations, baculovirus-based insect cell expression systems, mammalian cell expression systems, and the ability to efficiently optimize protein expression yields in all systems. Demonstrated expertise in using quantitative methods to solve protein expression problems and a sound knowledge in analytical protein biochemistry preferred. Senior level candidates encouraged to apply for leadership roles in the same area. **Job code: BBS101**

Protein Expression and Purification (Ph.D./M.S./B.S.)

Individuals experienced in cloning, expression, purification and characterization of novel protein targets for drug discovery and structural biology. Successful track record in expressing and purifying multi-milligram quantities of protein with sufficient quality for crystallization and biophysical analyses is essential. Strong protein analytical skills required. Competence with recombinant DNA methodologies, ligand binding and enzyme assays is a plus. **Job code: BBS102**

Biophysical Chemistry (Ph.D./M.S./B.S.)

Experienced in the biophysical analysis of proteins, with demonstrated expertise examining the effect of ligands on protein folding, protein structure, or in structural biology analysis of ligand binding. Expertise in the following areas preferred: calorimetry, fluorescence spectroscopy, or CD spectroscopy. Individuals desired who can exploit both equilibrium and kinetic approaches to characterize stability, folding, and binding in order to optimize interactions between drug targets and lead molecules. **Job code: BMT100**

High-Throughput Screening/ Biophysical Chemistry (Ph.D./M.S./B.S.)

Background in Protein Biochemistry with experience in an HTS environment desirable. Will be engaged in Functional Genomics and lead discovery utilizing ThermoFluor, 3DP's proprietary any-target HTS technology. Experience in metabolic pathways and/ or Enzymology is desirable. Managerial experience and skill in spectroscopy, calorimetry, and robotics a plus. Must be MS Excel proficient. **Job code: BGP100**

Laboratory Robotics (M.S./B.S.)

Extensive experience in liquid handling robotics and experience in an HTS environment necessary. Will be responsible for programming liquid handling routines and routine maintenance of a wide variety of HTS instrumentation. Experience in robotics integration and proficiency in Visual Basic programming a plus. **Job code: BGP101**

With sites in Cranbury, NJ and Exton, PA, a suburb of Philadelphia, 3DP offers a comprehensive compensation and benefits package. Qualified individuals are invited to send their cover letter and resume with contact data for three references to:

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Science for Life

Chiron

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Chiron Corporation

Chiron, located in Emeryville, CA, with offices in Seattle, WA, a world leader in biotechnology, is proud to be celebrating its twentieth anniversary this year. We have been built through a series of companies that have a history of science for life and that have made important discoveries that make a difference in people's lives. We are seeking talented, self-motivated individuals to fill the following positions:

Positions in Seattle, WA:

DIRECTOR, RESEARCH (#5187S)

Manage all aspects (scientific and administrative) of the preclinical evaluation of antiinfective compounds for the selection of clinical development candidates with a particular emphasis on in vivo efficacy and pharmacokinetic drug metabolism studies. Requires Ph.D. in Biological Sciences with at least 10 years of post-graduate experience, including at least 5 years in the biotech industry. Located in Seattle, WA.

SENIOR SCIENTIST, RESEARCH (#5180S)

Responsible for conception, design, implementation, and interpretation of scientific research projects pertaining to pharmaceutical and chemical development. Plan and supervise multiple research projects requiring initiative and innovation. Requires Ph.D. in Organic Chemistry, plus postdoctoral work and 8-10 years of related industry experience. Located in Seattle, WA.

ASSOCIATE II, RESEARCH (#5181S)

Perform a diverse of tasks or a more specialized nature that directly support pharmaceutical and chemical development. Perform technical laboratory tasks in order to discover, develop, or produce chemical compounds and reliable robust chemical processes. Requires degree in Chemistry, minimum of 2 years of related experience with BA, or 0-1 years of relevant pharmaceutical industry experience with MA. Located in Seattle, WA.

For the above positions, please email your resume, indicating Req. # in subject line, to resumes@pathogenesis.com
or send to 201 Elliot Ave. West, Ste. 150, Seattle, WA 98119

Positions in Emeryville, CA:

PRINCIPAL SCIENTIST, RESEARCH (#5044S)

Principal Scientist in Immunotherapy and Antibody Therapeutics. Work as a group leader in charge of preclinical activities in predevelopment and development projects. Represent the project to upper management at Chiron and outside collaborators. Work with RA, other scientists in the group and team members of the project team. Requires Ph.D. in Immunology or related field, with more than five years industrial experience. Experience with cell-based in vitro B cell functional assays a must.

SENIOR SCIENTIST, RESEARCH (#5118S)

Responsible for providing pharmacokinetic and pharmacodynamic support in all phases of drug development. Advocate and develop pharmacokinetic/pharmacodynamic (PK/PD) strategies for selection and development of novel therapeutics (proteins and small molecules) for regulatory filing. Integrate PK/PD, molecular biology, toxicokinetics and pharmacology to determine optimal dosing strategies. Involved in designing studies, writing protocols, data analysis, writing reports and writing pharmacokinetic sections of NDA and/or BLA. Requires Ph.D. in pharmacokinetics or related scientific discipline with at least 8 years experience. In-depth knowledge and understanding of the PK/PD principles, with good knowledge of the application of these principles in drug development.

Resumes for the Emeryville positions may be emailed to **jobs@chiron.com** or mailed to:
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UCB Research Inc. brings together the best of two worlds, a pioneering entrepreneurial spirit backed by the strength of an established pharmaceutical industry leader. Together, these attributes allow UCB to advance important new treatments for allergy, immunology, and central nervous system disorders. We are seeking enthusiastic, creative scientists to join UCB Pharma's US based research team located in Cambridge, MA.

Molecular & Cellular Biology

Senior Scientist

This position requires a Ph.D. in molecular immunology with a specialization in inflammation research. Familiarity with both signal transduction and general immunological assays and at least 2 years post-graduate experience.

Target Discovery and Bioinformatics

Senior Scientist/Molecular Biologist

We are seeking an individual with a broad knowledge of gene cloning strategies, and protein expression. The applicant should hold a Ph.D. or MD degree and greater than 3 years post-graduate experience.

Pharmacology

Senior Scientist

Requirements include a Ph.D. in Pharmacology and a minimum of 3 years post-doctoral experience. Working knowledge in the area of inflammation-based *in vitro* cellular assays, *in vivo* models of airway disease, applied histology, and aerosol technology.

Research Associates

We have several openings for Research Associates with *in vitro* and *in vivo* experience. Requirements for these positions are a BS or MS in biology or immunology with 1-4 years experience in industry.

Bioanalytical

Senior Scientist

The successful candidate will have a Ph.D. in pharmacokinetics or other allied discipline with 0-5 years experience. Knowledge of bioanalytical methods development (sample extraction and MS/MS analysis) is necessary.

Medicinal Chemistry

Principal Scientist

This position requires a Ph.D. in synthetic organic chemistry along with post-doctoral training in the same area. In addition, a minimum of 6 years of successful, small molecule, drug discovery experience in an industrial environment as evidenced by patents and publications is required. Applicants must also have at least 3 years of experience supervising other Ph.D. and MS chemists.

Senior Scientists/Research Associates

We have several openings for candidates who have experience in multi-step organic synthesis and contemporary purification techniques.

Analytical Chemistry

Research Associate

This position requires a BS or MS degree in chemistry, 1-5 years of industrial laboratory experience, and strong skills in analytical chemistry with particular emphasis in LC/ESI/MS techniques.

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840 Memorial Drive Cambridge, MA 02139 For additional details on each position, please refer to the careers page of our Web site. If interested, please send your resume to: research.recruiter@ucb-group.com. UCB Research is an equal opportunity employer.

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

DIRECTOR OF NEUROBIOLOGY
We have an outstanding opportunity for an experienced molecular neurobiologist to assume a leadership role in a CNS gene therapy program focusing on AAV mediated delivery of therapeutic genes for treatment of neurological disorders. The successful candidate will be responsible for building and leading a preclinical research team in determining the efficacy of candidate AAV vectors in animal models of CNS disease.

Applicants should have a Ph.D. or M.D. degree with a minimum of 8-10 years of experience in the neuroscience field.

PROJECT LEADER/ASSOCIATE DIRECTOR
Seeking motivated project leader to direct a group of scientists and research associates in the development of an AAV-FVIII gene therapy product. Experience in molecular biology, assay development, in vitro and in vivo gene expression, and animal models required. Good management and communication skills required. AAV and FVIII experience preferred.

Candidate must have PhD and 5 years of relevant experience.

SENIOR FORMULATION SCIENTIST
As part of an ongoing expansion of our Development Group, we are seeking a highly qualified scientist to fill a key role in the development of recombinant AAV vectors for human clinical trials.

The successful candidate will have a strong background in the optimization of formulation and stability of biotechnology products, ideally viral vectors. A good working knowledge of relevant FDA regulations and cGMP required.

Experience in vector purification process optimization and scale-up a plus. Candidates must have a PhD, 3+ years of relevant experience, and excellent communication skills.

DEVELOPMENT SCIENTIST / PLASMID PURIFICATION
As part of an ongoing expansion of our Development Group, we are seeking a highly qualified scientist to fill a key role in the development of recombinant AAV vectors for human gene therapy.

The successful candidate will be responsible for development and scale-up of processes for plasmid purification, and will have a background in plasmid production and purification at large scale. A good working knowledge of relevant FDA regulations and cGMP required. Candidates must have a PhD, 2+ years of relevant experience, and excellent communication skills.

PHARMACOLOGY / TOXICOLOGY SCIENTIST
Seeking a pharmacologist/toxicologist to design, coordinate, monitor, and evaluate GLP toxicity and biodistribution studies in support of the clinical evaluation and registration of AAV based gene therapy products.

Position requires PhD in toxicology with 2+ years of industrial experience in in vivo toxicology testing. Experience with biological and viral based products preferred.

ANIMAL FACILITY MANAGER
Opportunity for an individual to manage and supervise an animal facility. Experience with animal care and health monitoring is essential. Experience in all aspects of small animal surgery (anesthesia, intramuscular, intra portal and iv dosing, sample collection, and necropsy) required. Experience with both immuno-competent and immuno-deficient animals necessary. Familiarity with AAALAC regulations necessary.

Candidate must have at least a BS degree and relevant management experience.

ANALYTICAL PROTEIN BIOCHEMIST
Avigen has an opening for a protein biochemist. The successful candidate will join a multidisciplinary team of scientists and will be principally involved in the structural characterization of AAV-based gene therapy vectors. The scientist will also collaborate with research and development groups on related projects such as structure-function studies and formulation-stability studies.

Candidates must have a strong background in physical biochemistry and have extensive experience with protein analytical methods, spectroscopic methods, and chromatography. Extensive experience with mass spectroscopy of proteins is required. Candidates should have a Ph.D. and Post-Doctoral experience in a relevant field, and at least 2 years of industry experience.

DOCUMENTATION MANAGER
The Documentation Manager is responsible for overseeing the authorship of documents for manufacturing process, the distribution and change control of over 600 controlled documents, issuance of weekly batch records and implementation of a work order database to the intranet. Also responsible for completing validation and implementation of a document management system, complete the construction of a document archive Room & communicate with vendors and architects, and organize the move of records upon completion, organize and lead the Material Review Board Meetings, coordinate with QA to establish topics for MRB resolution, create agenda and keep minutes. Also includes managing and archiving (paper and electronic) manufacturing records including batch, training and cleaning records, building drawings and test data; microfilming lab notebooks and all associated responsibilities involved and manage 2 full time and 2 part time employees.

Candidate must possess proven leadership and organizational skills, be skilled in technical writing, database management, and records retention. Must have experience with GMP Document Change Control, adept at performing audit functions, writing Standard Operating Procedures (SOP's), skilled at motivating and mentoring subordinates, working in a collaborative, team-oriented environment and accurately performing service functions in a timely manner.

Position requires a B.S. or equivalent with at least five (5) years experience in the Biotech/Pharmaceutical industry, solid understanding of GMP's, previous supervisory experience and 21CFR Part 1. Computer validation and database development experience a plus.

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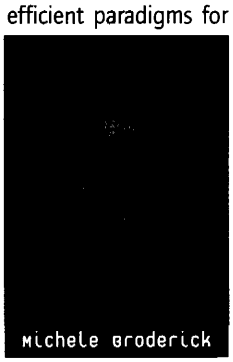
the primary reason why our customers come to us. Our thorough screening process tries to match scientists' intangible qualities with the laboratory environment at whatever company they're going to," he says. "Not everyone who comes through our doors gets hired. Every single candidate goes through a hiring process similar to that any of our customers would use to hire their own full-time employees. We work hard with recruiters at our clients' sites to outline exactly the type of scientist that they want."

CAMBRIDGE, Massachusetts: Opened in January 1999, the Pfizer Discovery Technology Center (DTC) aims to develop new, more efficient paradigms for discovering drug candidates. The DTC has 50 employees and seeks plenty more. "We're in a recruiting mode for a 40 percent growth rate in 2001," says human resources manager Michele Broderick. "We have research associate positions in the lab available for B.S. and M.S. scientists and information technology positions for people trained in bioinformatics and cheminformatics. At present about three-quarters of hires go into bench work."


Michele Broderick

The DTC benefits from its location between Harvard and MIT. "We draw from those universities," says vice president Rod MacKenzie. But the center has a far broader profile. "We hire from other academic institutions and industry," he continues. "We have people here from around the world."

M.S. and B.S. degrees can take scientists a long way at the DTC and throughout Pfizer. "We have examples of people who have Ph.D. equivalents through their work experience moving through our management and technical ranks," says MacKenzie. "There is no limit for the people who are truly exceptional in their fields even if they don't have Ph.D.s."


Rod MacKenzie

How can scientists about to receive their M.S. or B.S. degrees determine whether they should aim for a future in the pharmaceutical industry? "Approach it as if you are doing a scientific experiment," advises MacKenzie. "Do research on what you need to do to meet the demands of a particular firm and position. Network across the industry; it's not that large. And use your academic advisers and colleagues to advocate for you and promote you within the community."

EVANSTON, Illinois: University Career Services at Northwestern University has two main goals: giving students assistance as they try to figure out what they would like to do with their professional lives and then helping them to find suitable positions. Among individuals with M.S. and B.S. degrees in life science and chemistry, "a significant number are going into bench work in research settings," says assistant director Brian Altman. "They are often interested in pharmas, the biotechnology industry, and health care in hospital settings." Several scientists who take positions outside the lab, he adds, have sought sales positions in pharmaceutical companies.

Whatever the position on offer, Altman says, companies have high expectations that applicants will possess skills in addition to their technical qualifications. "Employers look very carefully for communication skills, including writing and the ability to present information to a group," he explains. "Among graduating M.S. and B.S. students they place high value on teamwork skills, leadership skills, interpersonal skills, and general professionalism." Since employers generally use job interviews to elicit those abilities, Altman advises students to prepare carefully for those occasions. "We help students to understand what interviews tend to be like and how to prepare for them," he says. "We also give them assistance in practicing interviews so that they can get a feel for the process."


Brian Altman

Before that stage Northwestern's Career Services tries to convince students to determine their possible career paths. "We're available to help students from the beginning," Altman says. "We encourage them to come in early to begin to formulate what their plans might be. We help them to explore their interests and to make use of resources to understand what their career options might be. We help them to identify the skills they want to put into play at work and to formulate an initial career plan. Once they have identified a particular track that they'd like to pursue we help them as they implement their job searches."

Altman emphasizes that holders of B.S. and M.S. degrees don't have to give up hope of further education once they start jobs in industry. "Quite a number of organizations provide tuition assistance for employees to obtain higher degrees," he says. "It varies from employer to employer. Students should investigate the situation with their employer of choice."

MERIDEN, Connecticut: "We look for recruits who hold a B.S., M.S., or Ph.D. degree to fill jobs in sales, service, marketing, and product development," says Rick Fulbright, vice president of worldwide sales for Packard BioScience Company, a producer of instruments and related consumables and services for use in drug discovery and other life sciences research. However, he adds, "Finding applicants with such qualifications is difficult because they seem to be unaware of career opportunities within various life science companies."

The reason? "Sales, as a profession, has poor visibility among science graduates," Fulbright says. Nevertheless, he adds, sales can provide a

CONTINUED ⇛

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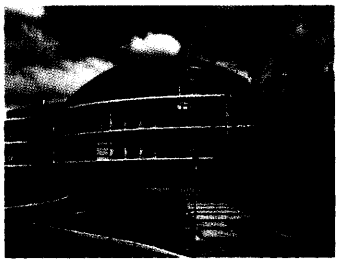

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In a team environment, you will support the development of potential new drug candidates by developing analytical methods and designing and analyzing product quality-related studies. **Req. #01-3319**

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As the Genomics liaison for the Arthritis and Inflammation Pharmacology teams in St. Louis, MO and Skokie, IL, you will determine and execute the goals and milestones for the A&I Genomics teams with respect to current and projected project needs and facilitate the process by which new drug discovery targets are discovered jointly among the Genomics, Biotechnology and A&I teams. Demonstrated expertise in multiple fields of inflammatory disorders or therapies is required. **Req. #01-2527**

CARDIOVASCULAR ASSOCIATE DIRECTOR
(St. Louis, MO)

As the Genomics liaison for the Cardiovascular and Metabolic Disease Pharmacology teams in St. Louis, MO and Skokie, IL, this individual will determine and execute the goals and milestones for the teams in relation to current and projected project needs, while facilitating the process by which new drug discovery targets are discovered jointly among the Genomics, Biotechnology, and CMD teams. Demonstrated expertise in lipid and diabetes disorders/ therapies is required. **Req. #01-2526**

Both individuals are expected to work at or close to the bench, acting as an interactive force in driving the day-to-day science. We are seeking a proven scientist as evidenced by a substantial number of publications, fluency in genomics and genetics methodologies and their application to target identification and validation in the discovery research environment, and leadership abilities, including good interpersonal skills and a strong drive to actively contribute. As valued members of the St. Louis Genomics community and the Global Genomics Leadership Team, both individuals will also be responsible for driving the integration of molecular science (to include tools and technologies) into a productive matrix with the pharmacology teams at Pharmacia.

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- **Protein chemistry (derivatization/conjugation)**
- **Protein interaction analysis (SPR, calorimetry)**
- **Biological mass spectrometry (ESI, MALDI, TOF-TOF)**
- **Immunological assay development**
- **Pathology**
- **Histology/Immunohistochemistry**
- **Antibody production**
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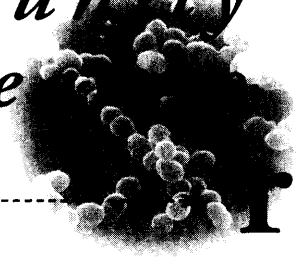

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Responsibilities include the design, development and validation of bioanalytical HPLC assays to evaluate pharmacokinetics of drugs and their metabolites in biological matrices from preclinical models. Qualified candidates will have a BS in Pharmacology, Chemistry or related science discipline (advanced degree preferred) and 2+ years laboratory background in analytical methods development and validation for pharmaceutical compounds. Hands-on experience setting up, validating and performing HPLC assays in biological matrices is required, along with familiarity with GLP procedures, analytical instrumentation and data acquisition software. Working knowledge of LC/MS is preferred.

DRUG TRANSPORT AND BIOAVAILABILITY

You will participate in the elucidation and optimization of pharmacokinetic properties of novel anti-infective compounds for preclinical and clinical development. Responsibilities include setting up and performing assays for drug transport in *ex vivo* systems, such as *ex vivo* tissue preparations (e.g., isolated ileal preps, Ussing chambers) or cell cultures (e.g., Caco 2). Qualified candidates will have an undergraduate or graduate degree in pharmacology, chemistry, biology, or a related field and 2+ years laboratory background with hands-on experience in assays. Experience with high-throughput methods, GLP procedures, data acquisition software, and standard statistical procedures/software is preferred. Computer literacy, including competency in Microsoft Office Suite, is required.

NATURAL PRODUCTS CHEMISTRY

As a research associate working under the guidance of an experienced senior natural products chemist, you will isolate/characterize bioactive compounds from microbial fermentation. The work will involve extraction, preparative column chromatography, bioassay of column fractions, analysis of column fractions by HPLC, working up combined column fractions, and developing subsequent chromatographic purification methods. A BS or MS in Chemistry with research experience in organic or natural products chemistry and familiarity with analytical and preparative HPLC is required; an MS candidate (or equivalent based on BS plus experience) would be expected to have considerably more laboratory experience, as well as publications in refereed journals. Experience in determining the structures of organic compounds using NMR and mass spectroscopy is highly desirable.

EXPERIMENTAL THERAPEUTICS

You will be responsible for designing, developing and implementing *in vitro/in vivo* experiments employing pharmacokinetic/pharmacodynamic principles in the evaluation of compounds emerging from discovery programs, as well as preclinical and clinical stages of drug development for bacterial and fungal programs. This will include development, validation and use of *in vivo* models of infection in animal models for assessment of organism virulence, as well as compound efficacy. Requires an MS/PhD in Biology, Microbiology or Pharmacology with 3+ years experience in experimental therapeutics/pharmacology, immunology or pathogenesis. Working knowledge of the performance/evaluation of results from experimental animal models of infection using bacteria and/or fungi is necessary.

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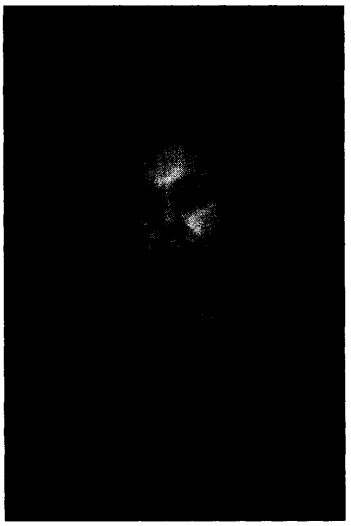

Photo by William K. Geiger

Angelica Cadavid, Ph.D., is interested in how complex multicellular structures arise during development. Her thesis project focused on the fruit fly eye as a system for the genetic dissection of one biochemical pathway that is involved in cell interactions critical to eye morphogenesis. Research on such essential proteins and pathways will contribute to our understanding of many fundamental aspects of cell and developmental biology.

Angelica L.M. Cadavid
Former HHMI Predoctoral Fellow at the University of Texas–Austin

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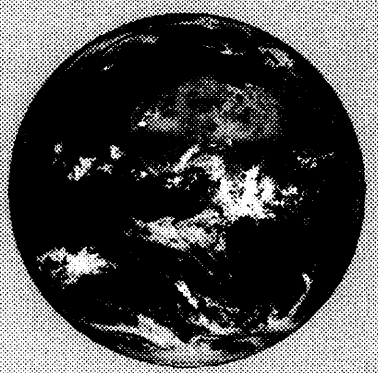

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Clinical Research Associate

Skin Science Research

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Imaging, Optics & Analysis

POSITION CODE: MSI-S

Imaging and microscopy techniques, when coupled with image analysis, can generate novel insight through the development of problem centered measurements. If you can work with images as arrays of measurements, bringing image processing and statistical methods to the table to generate quantitative results and if you desire to see your optical and imaging skills influence our research and our products you may succeed in one of these positions. The level is open and hands-on experience is a plus. A graduate in engineering or physical sciences with an appropriate level of mathematical expertise is preferred.

Devices and Human Factors

POSITION CODE: DHF-S

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very satisfying career for individuals with a B.S., M.S. or Ph.D. degree who hope to stay in the scientific world but wish to explore a career outside of the lab. "Besides finding the world of science appealing, potential recruits who like meeting people and initiating conversations and friendships will enjoy sales and/or marketing," he says. "Developing a rapport with fellow scientists is essential because it is the most effective way to identify the appropriate product for a particular research project or scientist. It is also rewarding because the process is like receiving a series of mini seminars in a researcher's area of expertise."

Fulbright seeks recruits with degrees in specific disciplines and with some laboratory experience. "I'm looking for people with a science degree particularly in biochemistry, pharmacology, immunology/microbiology, biology, or molecular biology," he says. "I prefer that they spend three or four years in a lab, preferably in a medical or graduate school. Recruits with this type of education and experience are best capable of communicating with principal investigators to assist them in identifying the proper products or solutions for their research."

Those skills have particular value in maintaining accounts. "You develop close relationships with your customers," Fulbright says. "The long-term objective is to satisfy our customers. Sales and marketing personnel with the right backgrounds are more likely to create satisfied customers."

He doesn't think that recruiters should force scientists to consider careers in sales. "Recruits have to conclude on their own that scientific sales is interesting," he says. "Most reach that conclusion after working in a lab and talking to the people who sell and service their equipment. Such conversations help them to pick a product line that they think is interesting and exciting as a career."

Alternative career opportunities of this type are available at many life sciences companies such as Packard BioScience. "Several positions at Packard are currently occupied by science graduates with B.S. or M.S. degrees, mine included," Fulbright concludes. "Others include the offices of president and COO, vice president and general manager, director of investor relations, and district sales manager, to name a few."

SHARON, Massachusetts As president of PROTRAN Resources, a firm that offers consulting and recruiting services to high technology companies, Ed Bocko has spent several years observing the recruiting habits of pharmaceutical firms and other life science companies. Today, he notes, "nonresearch positions account for about 50 percent of the jobs available for M.S. and B.S. scientists in life science companies that have a product. That's a big change from 10 years ago, when 9 out of 10 jobs were in the research area. Sales has picked up tremendously since then as a career option."

What characteristics do recruiters for life science companies typically seek in applicants? "The communication skills definitely have to be there," Bocko says. "You normally have to do a chalk talk to be hired; that gives you a chance to stand up and talk about your science. We look for enthusiasm for the science along with evidence of how much applicants really understand what they have learned and how they have moved ahead with it." Those qualities stand separate from grades. "If students don't seem to have the enthusiasm, it counts against them even if they have very high GPAs," Bocko points out. "We've had some 4.0s who have come out flat."

The road to enthusiasm starts early. Bocko recommends that students should volunteer for research and other tasks in college early in their undergraduate careers. In addition, he says, "Students should realize that universities have alumni eager to volunteer to mentor undergraduates. In other words, there's a lot of help out there."

Whether or not science students consult mentors, Bocko advises them to undertake solid preparation before they embark on any job search. "I usually recommend some really good study on what you want to do with your degree," he says. "Understand the differences between diagnostic, biotechnology, and pharmaceutical companies. Learn which companies match your criteria in terms of such factors as size, location, 'risk,' reputation, and type of industry."

Having targeted interesting companies, Bocko recommends that students should try to explore them from the inside. "Talk with alumni who work for the target companies, for example, or to scientists at your college involved in research collaborations with them," he advises. "Rather than job seeking, work first at information seeking by visiting the company to look for input. Interestingly the scientists who do that tend to get jobs earlier than those who don't."

As Bocko sees it, M.S. and B.S. scientists who win jobs in the lab face one barrier to professional advancement. "In most of the companies I'm aware of the lack of a Ph.D. will not help on the research side," he says. "However, a few companies have programs that give scientists with a Master's degree and several years of experience the chance to obtain the same status level and salary as Ph.D.s. And many companies have excellent benefit packages that pay for employees to obtain professional degrees."

Defining the frontiers of medicine

Lexicon Genetics Incorporated is a drug discovery company of the post-genome era and a leader in defining gene function for the discovery of pharmaceutical products. We are looking for talented people to work at our corporate headquarters, in The Woodlands, Texas, and also at Lexicon Pharmaceuticals, a division of Lexicon Genetics Inc., based in Princeton, New Jersey:

Scientists, Molecular Genetics – ***The Woodlands, Texas***
Experienced scientists are needed to participate in our efforts to define gene function using targeted mutagenesis in murine embryonic stem cells. Requirements include a Ph.D. in Molecular Biology or related field, 3 years post-doctoral experience and proven expertise in the field of Molecular Genetics with skills including DNA manipulation, genomic library screening, targeting vector construction, genomic Southern, PCR and sequence analysis.

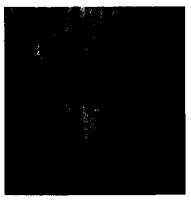
Veterinary Pathologists – ***The Woodlands, Texas***
The Department of Pathology is seeking two Veterinary/Comparative Pathologists interested in pursuing a career in pathology of genetically engineered mouse models. These individuals will provide anatomic pathology support for phenotypic analysis and drug discovery programs, and will interact with scientists in the fields of Immunology, Endocrinology, Oncology, Cardiology and Neurology. These positions require a D.V.M. or M.D. degree, certification in pathology and priory histopathology experience in rodents.

Research Associates, Assay Development and High Throughput Screening – ***The Woodlands, Texas***
Qualified candidates will participate in various functions of HTS including gene cloning and expression vector construction, protein expression, biochemistry and assay development, robotics supervision, data processing and management of compounds in a team-oriented environment. Preference will be given to candidates with industrial experience in eukaryotic protein expression, developing enzymatic and/or receptor binding assays, HTS lab instrumentation and data analysis.

Scientists, Eukaryotic Protein Expression and Assay Development – ***The Woodlands, Texas***
We seek a Eukaryotic Protein Expression Scientist with direct experience, preferably in an industrial setting with large scale active protein expression in eukaryotic cell culture systems. Familiarity with all common protein expression technologies including prokaryotic, yeast, insect cell and mammalian expression systems is required. We also seek a Cellular Bioassay Scientist with direct experience, preferably in an industrial setting, with the development of cell based HTS assays for second messengers and gene activation. These positions require a Ph.D. or M.D. in a relevant field with at least three years of applicable post-doctoral experience and a clear record of accomplishment. Familiarity with data-handling Bioinformatics tools is preferred. Knowledge of modern pharmacology, biochemistry and enzymology, as well as HTS assay development and implementation is desirable.

Medicinal Chemists, Lexicon Pharmaceuticals – ***Princeton, New Jersey***
We are seeking outstanding medicinal chemists at the Ph.D. level. A minimum of 3 years experience in pharmaceutical drug discovery/development is required. Candidates should also possess a good knowledge in computational chemistry. The position involves the optimization of lead compounds using parallel synthesis and traditional medicinal chemistry approaches as well as the design and synthesis of targeted combinatorial libraries.

To apply, please submit your resume with cover letter to mvoigt@lexgen.com, mail to Human Resources, Lexicon Genetics Incorporated, 4000 Research Forest Drive, The Woodlands, Texas 77381-4287, USA, or fax to 281-863-8050. For more information about Lexicon Genetics Incorporated., please visit our web site at www.lexicon-genetics.com



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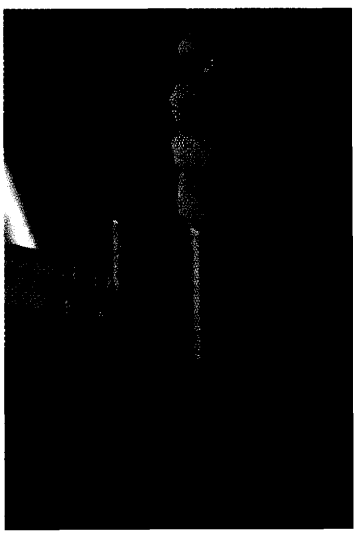

mayo

MAYO CLINIC
Rochester, Minnesota
Postdoctoral Position

Two NIH funded postdoctoral positions are available to study structure and function of nicotinic acetylcholine receptors. One position focuses on the structure of the agonist binding site using protein expression, protein chemistry and structural determination and modeling. The second position combines mutagenesis with high-resolution single channel recording and kinetic analysis to investigate agonist binding, the energy landscape governing channel gating, and mechanisms by which inherited mutations alter receptor function. Seeking highly motivated applicants experienced in protein chemistry or electrophysiology. Send curriculum vitae, description of research interests and names of three references to:

Steven M. Sine, PhD
Mayo Clinic
1-135 MS
200 First Street SW
Rochester, MN 55905
Email: sine@mayo.edu
See also: http://www.mayo.edu/research

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In our Metabolic Diseases Department

DIABETES and OBESITY

You will have a Ph.D followed by at least two years of post-doctoral experience in a similar environment.
You will have demonstrated relevant experience of the *in-vivo* models used in studies of obesity and in particular of type 2 diabetes.
You will contribute to the *in-vivo* part of the research programs of the team and you will have responsibilities for technicians.
Enthusiastic, you have excellent interpersonal and communication skills to work in an interdisciplinary environment.
You are fluent in English.

Applications with curriculum vitae, photograph and letter are to be sent to **PUBLIVAL/8028** - 27 Route des Gardes 92190 MEUDON (FRANCE)

Harvard Medical School

ASSISTANT OR ASSOCIATE PROFESSOR
Department of Pathology and the New England Regional Primate Research Center

The Department of Pathology of Harvard Medical School invites applications for a faculty position for a pathologist to direct the activities of the Division of Comparative Pathology at the New England Regional Primate Research Center (NERPRC).

Responsibilities include: conduct of an independent research program in experimental pathology; direction of diagnostic pathology services in support of NERPRC's animal colonies and multidisciplinary research program; collaborative, diagnostic and research support to other members of the NERPRC faculty; oversight of the training of postdoctoral fellows in an NIH-sponsored training program. In addition to the institutional support that will be provided, the appointee will be expected to compete successfully for research support from NIH and/or other granting agencies. Certification by the American College of Veterinary Pathologists is desirable but not required. Appointment at the Assistant or Associate Professor level in the Department of Pathology, Harvard Medical School, depending upon experience.

Qualified applicants should submit a letter of interest, along with a *curriculum vitae* and names of references to:

Dr. Ronald C. Desrosiers, Director
New England Regional Primate Research Center
One Pine Hill Drive
Box 9102
Southborough, MA 01772-9102

Harvard University is an AA/EOE and encourages the applications of qualified women and minorities.

GENOMICS INSTITUTE OF THE NOVARTIS RESEARCH FOUNDATION

Biology Positions

We seek outstanding biologists to develop innovative combinatorial molecular and cellular strategies to address challenging problems in biomedical research and human disease. Biologists will combine functional small molecule, cDNA expression and antibody library screens with custom ultra-high throughput robotic systems to identify critical effectors in disease. Successful candidates will interact closely with a state-of-the-art, integrated technology platform (genomics, proteomics, bioinformatics, and high throughput screening), and biomedical research programs in neurobiology, immunology, signal transduction/cancer biology and microbiology/virology.

We are interested in biologists/biochemists with academic and/or industrial research experience (B.S., M.S., Ph.D.) who desire to participate in building a world class biomedical research program that includes the development and application of new technologies to significant medical and disease areas.

We also seek outstanding individuals with experience in cutting-edge laboratory robotics and automation.

Please submit C.V. and any supporting documents to:

Dr. Peter Schultz, Institute Director
Dr. Jeremy Caldwell, Director of Molecular and Cell Biology
Genomics Institute of the Novartis Research Foundation (GNF)
Job Code: JC

3115 Merryfield Row Suite 200, San Diego, CA 92121;
Fax: 858/812-1670; or Email: jobs@gnf.org
(subject line must include Job Code)

The Genomics Institute of the Novartis Research Foundation (GNF), located in the Torrey Pines area of San Diego, CA, is funded by the Novartis Research Foundation and dedicated to the development and application of new methods and techniques for genome-wide biological discovery and biomedical research. EOE

www.gnf.org

UNIVERSITY OF OXFORD

Linacre Professorship of Zoology

The electors intend to proceed to an election to the Linacre Professorship of Zoology with effect from as early a date as may be arranged.

The professor should be a zoologist. There is no restriction as to field of study within this general area, although it would be hoped that the research interests of the appointee would complement and enhance the existing strengths of the Department of Zoology as set out in the further particulars.

A non-stipendiary fellowship at Merton College is attached to the professorship.

Applications (ten copies, or one only from overseas candidates), naming three persons who have agreed to act as referees on this occasion (with postal and e-mail addresses and telephone/fax numbers), should be received not later than 29th October 2001 by the Registrar, University Offices, Wellington Square, Oxford OX1 2JD, from whom further particulars may be obtained. Further particulars may also be accessed on the Web (URL: http://www.admin.ox.ac.uk/fp/).

The University is an Equal Opportunities Employer.

Research Support Specialist I; Band E; EX (AT7101); Department of Molecular Medicine

Manage & operate a core facility where recombinant proteins will be expressed & purified for a group of on-campus investigators. Clone desired genes into suitable expression vectors & purify gene products from over-expressing bacteria or insect cells. Analyze data, troubleshoot protocols & scientific equip, train personnel in molecular biology & biochemistry techniques.

Requirements: BS required, MS or Ph.D. in biochemistry or related field preferred. Minimum 2-3 yrs exp required. 5 yrs exp in molecular biology & biochemistry including site-directed mutagenesis & recombinant protein expression preferred. Strong verbal & written communication skills. Able to work collaboratively with staff & students.

Send CL&R w/job # to:

CORNELL

Nicole Quick
Office of Human Resources
S3007 Schurman Hall
College of Veterinary Medicine
Ithaca, NY 14853

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http://www.tc.cornell.edu
http://chronicle.com/jobs/profiles/002711.htm

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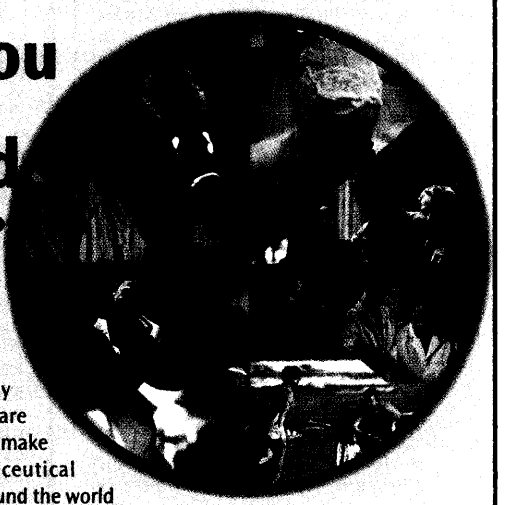

There are many different things you can do within your life that will leave a lasting impression. One is enhancing the health and well-being of others. By choosing a career with **Aventis**, you are choosing to reach out to millions and make a difference. With dynamic pharmaceutical products and services, our reputation around the world is that of a leading health care pioneer. We continue to build upon this distinction by attracting individuals who share our passion for innovation and improving the quality of life.

Team Leader

Molecular Biology and Genomics
Respiratory and RA Disease Group
Job Code: DIA2751

The successful candidate will lead a laboratory focused on the identification and validation of genes that play a critical roll in inflammatory processes. A central theme will be the use of murine disease models, especially those of rheumatoid arthritis, to identify and subsequently validate genes and their protein products responsible for the pathology. Working closely with laboratories in the Pharmacology groups, that develop and run these models, this laboratory will apply state of the art microarray, Taqman and in situ/immunohistochemistry analysis, supported by our Functional Genomics group, to identify candidate genes by their pattern of expression. Demonstration of similar orthologue expression in human, will trigger experiments to validate disease association using techniques such as adoptive transfer of bone marrow haematopoietic cells, expressing the gene of interest or a dominant negative form of the protein, to irradiated murine hosts in backgrounds relevant for disease model profiling. Understanding of human and murine immunology will be critical for the phenotyping of these models. Broad skill set in molecular biology and/or genomics including a significant number of the following techniques; mRNA purification, Northern hybridisation, Taqman, microarray expression analysis, cDNA cloning, tissue culture (primary cells), FACS, viral delivery of cDNAs and oligonucleotide antisense.

Requirements include: a minimum of 3-5 years post-doctoral experience in academia or industry with a proven track record; a well-developed understanding of immunology, especially if applied to in vivo murine models. Experience of cellular signalling preferred. Previous supervisory experience is essential.

Apply online at Careers at Aventis, the Aventis Recruitment Center:

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We reward our associates with exceptional benefits including medical/dental, retirement plans, holiday/floating holidays, work/life benefits and the opportunity to learn and grow.

Aventis Pharmaceuticals is proud to be an equal opportunity employer committed to a diverse workforce.

FACULTY POSITIONS
Biomedical Engineering

The Program in Biomedical Engineering at the Florida A&M University College of Engineering and Florida State University invites applications for several tenure-track faculty positions in its newly founded graduate degree program in biomedical engineering. The College is a joint entity of FSU and FAMU, located in Tallahassee, Florida. A Ph.D. or M.D./Ph.D. in biomedical engineering, medical sciences, or a related discipline is required. Rank is open, and candidates must demonstrate a strong commitment to building both the educational and research components of the recently approved B.S./M.S./Ph.D. degree programs in biomedical engineering. Senior applicants must have a record of national distinction in biomedical engineering or related discipline. The possibility exists for highly qualified senior applicants to be nominated for a Florida State University Eppes endowed Professorships. Of particular interest are those candidates with exceptional background in tissue engineering, metabolic engineering, or intercellular transport processes. The Department has a Special Opportunity Award from the Whitaker Foundation, an NSF-funded NMR/MRI system for molecular transport and microimaging studies, and new laboratory and office space dedicated to biomedical engineering research. Excellent opportunities exist for interactions with the National High-Magnetic Field Laboratory, The FAMU College of Pharmacy and Pharmaceutical Sciences, and the FSU Institute of Molecular Biophysics, as well as for affiliation with the new College of Medicine at FSU. Qualified applicants should send a letter of application, current curriculum vitae, a statement of research and teaching interests, and the names and contact information of three references by October 15, 2001, to: **Dr. Michael H. Peters, Director, Program in Biomedical Engineering, FAMU–FSU College of Engineering, 2525 Pottsdamer Street, Tallahassee, FL 32310**. Further information can be obtained at **website: http://www.eng.fsu.edu/bme**. *FAMU–FSU is an Affirmative Action/Equal Employment Opportunity Employer. Women, minorities, veterans, and persons with disabilities are encouraged to apply.*

CHAIRPERSON, DEPARTMENT OF PLANT BIOLOGY
Michigan State University

Michigan State University invites applications and nominations for the position of Chairperson for its new Department of Plant Biology. Candidates should be qualified to hold the rank of tenured **FULL PROFESSOR**. The Department has more than 30 faculty members, strong graduate and undergraduate programs, and a support staff of career professionals. It is built on the concept of integrating all subdisciplines of plant biology ranging from evolution and ecology to molecular genetics. Research is conducted in a modern research building, at an on-campus field facility, at the Kellogg Biological Station, and at field sites throughout the world. The new Chairperson will have the opportunity to significantly influence the future direction of the new Department through the filling of several open positions. The Chairperson is expected to provide leadership and to promote a creative environment for teaching and research. Candidates must possess an established record of scholarship, proven leadership and interpersonal skills, and a vision of innovative programs in research and education. Continuation of an active research program is encouraged and supported. Applicants should submit complete curriculum vitae and any supplemental material that they deem helpful for a preliminary screening. Every effort will be made to maintain confidentiality until the final slate of candidates is selected. Review of applications will begin October 1, 2001, and will continue until the position is filled. Please send application materials to: **Chairperson Search Committee, Department of Plant Biology, Michigan State University, East Lansing, MI 48824-1312**. *Women and minorities are strongly encouraged to apply. MSU is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

UNIVERSITY OF WISCONSIN-MADISON MEDICAL SCHOOL

FACULTY POSITIONS
University of Wisconsin–Madison
Biology of Sex and Gender Differences

The University of Wisconsin–Madison is expanding interdisciplinary research into the basic biological underpinnings of sex and gender differences in health and disease. Investigations in biochemistry, physiology, pharmacology, and genetics are fundamental to understanding gender differences in disease epidemiology and health outcomes as well as the overall control mechanisms of physiologic processes in both sexes.

We seek **TENURE-TRACK FACULTY** to form the nucleus of a synergistic interdisciplinary research group to complement strong departmental programs, as well as cross-campus programs such as cell and molecular biology, biotechnology, endocrinology/reproductive physiology, and environmental toxicology. Applications are invited from candidates who are using molecular, cellular, or genetic approaches to study sex and gender differences in a variety of areas. Faculty appointments could be in any appropriate department with an affiliate appointment in the Center for Women's Health and Women's Health Research.

Applications should include curriculum vitae, a statement of research interests, teaching experience, career goals, and the names and addresses of three references. Send materials to: **Molly Carnes, Chair, Biology of Sex and Gender Differences Search Committee, c/o Margie Martin, University of Wisconsin Medical School, 1300 University Avenue, Madison, WI 53706. E-mail: msmartin@facstaff.wisc.edu**. University of Wisconsin-Madison **website: http://www.wisc.edu/**.

The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply. Confidentially may be requested in writing. Finalists cannot be guaranteed confidentiality.

EVOLUTIONARY BIOLOGY

The Department of Biological Sciences (**website: http://www.isu.edu/departments/bios**) at Idaho State University invites applications for two **TENURE-TRACK FACULTY**. Applicants should have a commitment to undergraduate and graduate education, an excellent record of professional productivity, preferably postdoctoral experience, and a Doctorate in an academic area related to either Position One, Plant Systematist and Curator of Herbarium with expertise in innovative phylogenetic approaches to hybridization, phylogeography, and speciation; or Position Two, Evolutionary Geneticist who uses molecular approaches to explore population genetics, ecological genetics, or genome evolution. Application reviews begins October 15, 2001, and continue until positions are filled. Candidates will be expected to establish a successful research program and teach relevant classes. To apply, send a letter describing your qualifications, curriculum vitae, research statement, statement of your teaching philosophy, curatorial statement (for Position One), and have three letters of reference sent to: **Plant Systematist** or **Evolutionary Geneticist Search Committee, Department of Biological Sciences, Idaho State University, Pocatello, ID 83209-8007**. *Idaho State University is an Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY POSITION IN PHARMACEUTICAL SCIENCES
The University of Oklahoma
College of Pharmacy

The Department of Pharmaceutical Sciences in the College of Pharmacy invites applications for a tenure-track faculty position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Applicants must possess a Ph.D. degree and have postdoctoral experience. A background in pharmacy is desirable. We are particularly interested in candidates with expertise in molecular approaches for the study of drugs and/or disease states, drug development and targeting, drug and gene delivery, and pharmacogenomics or toxicogenomics. Successful candidate should have a record of peer-reviewed grant support and publications or a strong potential to attract peer-reviewed external grant support and should be prepared to participate in the teaching of professional Pharm.D. and graduate programs in the College as well as be involved in the service to the college and university. The Department of Pharmaceutical Sciences offers first-class laboratory space and competitive start-up packages to the successful candidate.

For consideration, send, FAX, or e-mail a letter describing current and proposed research activities; current curriculum vitae; and the names, addresses, telephone numbers, and e-mail addresses of three references to:

Dr. Gordon P. Sachdev
Department of Pharmaceutical Sciences
College of Pharmacy
University of Oklahoma Health Sciences Center
Box 26901
Oklahoma City, OK 73190
FAX: 405-271-7505
E-mail: gordon-sachdev@ouhsc.edu

For fullest consideration, applications should be received by October 1, 2001, but the search will continue until the position is filled.

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

FACULTY POSITION
MEDICINAL AND NATURAL PRODUCTS CHEMISTRY
University of Iowa
College of Pharmacy

The Division of Medicinal and Natural Products Chemistry (MNPC) invites outstanding applicants for a tenure-track **ASSISTANT PROFESSOR** position. Applicants must have a Ph.D. in medicinal chemistry, chemistry, biochemistry, or biological sciences and relevant postdoctoral experience. The new position offers excellent laboratory space, start-up package, and salary with expectation of establishing an independent research program and teaching in the graduate and professional programs. Applicants with research interests in any aspect of medicinal chemistry, chemical biology, and pharmaceutical biotechnology are encouraged to apply. Information about MNPC may be found at **website: http://www.uiowa.edu/~mnpcphar/**. Applicants should submit curriculum vitae, a concise description of their proposed research, and a list of three references to: **Professor Kevin G. Rice, Chair, Search Committee, Division of Medicinal and Natural Products Chemistry, College of Pharmacy, University of Iowa, Iowa City, IA 52242** by October 1, 2001. *The University of Iowa is an Equal Opportunity/Affirmative Action Employer. Women and underrepresented minorities are encouraged to apply.*

FACULTY POSITION
Gross Anatomy, Histology, and Embryology

Applicants must have a Ph.D. and at least three years of teaching experience at the graduate level. Please send curriculum vitae to: **Dr. Douglas Poorman, Chief Academic Officer, Southwest College of Naturopathic Medicine and Health Sciences, 2140 East Broadway Road Tempe, AZ 85282**.

ASSISTANT/ASSOCIATE PROFESSOR OF PLANT PATHOLOGY: tree fruit pathology, Penn State: Applications are invited for a tenure-track position in the Penn State Plant Pathology Department with 60% research and 40% extension education assignment, focusing on the epidemiology, biology, and management of important current and emerging diseases of tree fruits in Pennsylvania. Responsibilities will be to develop a nationally and internationally respected research program that includes both collaborative and independent research projects that are responsive to industry needs and supportive of the extension education component. Research objectives could include the epidemiology, biology, and management of important tree fruit diseases such as fire blight, scab, brown rot, and summer diseases of apples. Responsibilities also will be to develop an extension/outreach program that involves the education of tree fruit industry and extension agents using traditional and new information delivery technologies. The education/outreach program must address the management of tree fruit diseases in Pennsylvania and be responsive to the needs of the tree fruit industry. The individual is expected to successfully mentor graduate students through advanced degree programs, obtain external funding to support both the research and extension education programs, and to collaborate with colleagues both at Penn State and other institutions. The position will be located physically at the Penn State Fruit Research and Extension Center, Biglerville, Pennsylvania. A Ph.D. in plant pathology with a strong academic background in mycology and/or bacteriology is required. Knowledge of epidemiology and disease management is desirable. Must possess excellent interpersonal and communication skills. Tree fruit experience desirable but not required. To apply, submit a letter of application, résumé, academic transcripts, a statement of research and extension education philosophies, and have three professional references sent to: **Dr. John M. Halbrendt, Search Committee Chair, Department of Plant Pathology, Position Number: S–11343, 212 Buckhout Laboratory, University Park, PA 16802**. Closing date is October 1, 2001, or until a qualified candidate is identified. *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION
MICROBIAL PHYSIOLOGY

Applications are invited for a tenure-track **ASSISTANT PROFESSOR** position in the Department of Microbiology, University of Manitoba, commencing spring of 2002. Ph.D. and postdoctoral experience with expertise in the area of microbial physiology is required. Application details and further information about the Department can be obtained from **website: http://www.unmanitoba.ca/**. Please send curriculum vitae and three letters of reference by September 21, 2001, to: **Dr. P. C. Loewen, Department of Microbiology, University of Manitoba, Winnipeg, MB R3T 2N2 Canada. E-mail: Peter_Loewen@unmanitoba.ca.** *The University of Manitoba encourages applications from qualified women and men including members of visible minorities, aboriginal peoples, and persons with disabilities. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

FACULTY POSITION
Biochemistry and Molecular Biology
Georgetown University

Science and Technology Education Coordinator: Coordinator will be responsible for contributing on a full-time basis to the management of graduate training programs in biotechnology and bioinformatics. Applicants should have experience in laboratory teaching of M.S. students and in modern methods of biotechnology and bioinformatics to help direct laboratory and internship courses. Ph.D. and three years of postdoctoral training or industrial work experience are required. Inquiries and salary requirements to: **Georgetown University Medical Center, 3900 Reservoir Road, N.W., BSB 337, Washington, DC 20007**.

POSITIONS OPEN

FACULTY POSITIONS
Reproductive/Developmental/Stem Cell Biologists
Oregon Regional Primate Research Center (ORPRC)
Oregon Health and Science University (OHSU)

Positions are available in the Division of Reproductive Sciences, ORPRC, OHSU, at appointment levels (**ASSISTANT, ASSOCIATE, FULL SCIENTIST**) commensurate with experience. Joint appointment in a relevant academic or clinical department at OHSU can be included. Excellent start-up support and laboratory space is available at ORPRC.

We seek individuals whose research complements ongoing and emerging programs at ORPRC, OHSU. Applicants using molecular, genetic, and cellular approaches to explore reproductive and developmental processes including stem cell technology, gene targeting, and conditional gene expression are encouraged. Research interests that integrate with other ORPRC areas including immunology, aging, and genetics are also sought.

Send curriculum vitae, names of three references, and a statement of research goals including the potential use of primates in your research program to:

Dr. Robert M. Brenner
Chair, Search Committee
Oregon Regional Primate Research Center
505 N.W. 185th Avenue
Beaverton, OR 97006

The search will remain open until the position is filled. *ORPRC/OHSU is an Affirmative Action/Equal Opportunity Employer.*

The Department of Nutrition and Food Science, Auburn University, is seeking applicants for **ASSISTANT, ASSOCIATE**, or **FULL PROFESSOR** tenure-track position; 33% teaching, 67% research. Starting date is January 6, 2001. The successful applicant will conduct research with multidisciplinary teams in food safety and detection with emphasis in developing biosensors for the detection of foodborne pathogens, develop an innovative research program in food safety, actively seek external funding, and participate in professional and university service. The candidate must have a Ph.D. in molecular biology, biochemistry, immunochemistry, food science and technology, or related discipline; a strong record of scholarly productivity; the ability to competently teach and mentor students; exemplary skills in developing and working in collaborative partnerships; and effective oral and written communication skills. Closing date for receiving applications is October 1, 2001, or until position is filled. Submit a letter of application with brief statement of current and future research plans; teaching interests; curriculum vitae including list of publications and grants; and names, addresses, and telephone numbers of four references to: **Dr. Y-H. Peggy Hsieh, Chair, Search Committee, Department of Nutrition and Food Science, 328 Spidle Hall, Auburn University, Auburn, AL 36849-5605. Telephone: 334-844-2211; FAX: 334-844-3268; e-mail: hsiehyp@auburn.edu.**

Auburn University is an Affirmative Action/Equal Opportunity Employer. Minorities, women, veterans, and people with disabilities are encouraged to apply.

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. 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, 2002. *Caltech is an Affirmative Action/Equal Opportunity Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*

POSITIONS OPEN

A full-time **TENURE-TRACK POSITION** in the Shepherd College Department of Biology is anticipated beginning in January 2002 subject to budgetary approval. Ph.D. in biology or a related discipline is required. The Department is seeking an Animal Physiologist capable of developing courses in one or more areas of specialization including animal behavior, comparative physiology, or medical microbiology. The successful candidate will have a commitment to undergraduate research in animal physiology and also be willing to teach general biology for nonmajors. Shepherd College is located approximately 65 miles northwest of Washington, D.C.; is a public baccalaureate institution with Master's-level programs in development in the West Virginia State College System; and has an enrollment of over 4,500 students. The application deadline is October 1, 2001. Send a cover letter and résumé and arrange for at least three letters of reference to be sent to: **Director of Human Resources, Shepherd College, P.O. Box 3210, Shepherdstown, WV 25443**. For more information, visit the Shepherd College **website: http://www.shephed.edu** or contact: **Dr. Donald Henry, Chair, Division of Natural Sciences and Mathematics, Shepherd College, P.O. 3210, Shepherdstown, WV 25443. Telephone: 304-876-5106; e-mail: dhenry@shepherd.edu**. *Affirmative Action/Equal Opportunity Employer. Minorities and women are encouraged to apply.*

FACULTY POSITION IN
PLANT BIOLOGY
University of California, San Diego

The Section of Cell and Developmental Biology in the Division of Biology at UCSD invites applications for a faculty position in plant biology with strong preference for the rank of **ASSISTANT PROFESSOR**. Exceptional candidates pursuing innovative research into all areas of modern plant biology are encouraged to apply. Research areas can include but are not limited to plant genomics/proteomics, cell and developmental biology, plant defense, and signal transduction.

The successful candidate is expected to develop a vigorous research program and participate in the undergraduate and graduate teaching curriculum. A Ph.D. degree and several years of productive postdoctoral research are required. Salary will be commensurate with level of appointment and based on the University of California salary scale.

Please submit curriculum vitae; a statement of professional goals and research interests; and names of five references and their addresses, e-mail addresses, telephone, and FAX numbers by October 15, 2001, to: **Plant Biology Search Committee Number 3-895S, Division of Biology 0346, 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.*

FACULTY POSITIONS IN CHEMISTRY AND BIOCHEMISTRY
Purdue University Department of Chemistry

The Department of Chemistry at Purdue University expects to have full-time openings at the **ASSISTANT, ASSOCIATE,** and **FULL PROFESSOR** levels in all areas of chemistry and biochemistry. Candidates should have a Ph.D. degree and should demonstrate exceptional promise in research and teaching at the undergraduate and graduate levels.

Applicants should send curriculum vitae, a summary of planned research, and three letters of recommendation to: **Professor Ian Rothwell, Head, Department of Chemistry, Purdue University, 1393 H.C. Brown Laboratory of Chemistry, West Lafayette, IN 47907-1393**. Files will be reviewed beginning October 15, 2001. *Purdue University is an Equal Opportunity/Affirmative Action Employer fully committed to achieving a diverse workforce. Women and minority applicants are encouraged to apply.*

USDA Agricultural Research Service

USDA
AGRICULTURAL RESEARCH SERVICE

The USDA, Agricultural Research Service, Plant Genetics Research Unit in Columbia, Missouri, is seeking two **Research Molecular Biologists/ Biochemists**; one at GS-14/15 (Announcement Number ARS-X1W-1419), salary range $73,186 - $111,913 per annum and one at GS-12 (Announcement Number ARS-X1W-1417), salary range $43,455 - $67,701. These two positions form a team in a newly funded project that will collaborate with and be located at the Donald Danforth Plant Science Center (DDPSC), St. Louis, Missouri. Scientists will develop a collaborative multidisciplinary research effort to understand the molecular/biochemical basis of soybean seed proteins, oils, and nutritive factors and their manipulation and interactions.

The objective is to obtain basic biochemical and molecular genetic information on soybean seed composition and development. Included are elucidation of gene products and their control, interactions among themselves and the environment, and variation in expression of plant growth. This information will be used in the application of molecular genetic techniques to facilitate manipulation of the seed traits. Cooperative research efforts are expected with researchers from the DDPSC, University of Missouri, and ARS. Successful applicants may be considered for adjunct professor appointments in the Agronomy/Biochemistry Departments at the University of Missouri. **United States citizenship is required.**

Comprehensive benefits package includes paid annual and sick leave, life insurance, health insurance, and a savings and investment plan, in addition to a Federal retirement plan. Candidates at the GS-14 or GS-15 grade levels must have one year of directly related, specialized experience at the next lower grade level; candidates at the GS-11 grade level must have a Master's or equivalent graduate degree in a field of study directly related to the position or 1 year of specialized experience equivalent to at least the next lower grade level; and candidates at the GS-12 level must have a Ph.D. or equivalent doctoral degree or 1 year of directly related, specialized experience equivalent to the GS-11 grade level. Specialized experience at all levels is experience involving molecular biology, biochemistry, and genetic techniques, and the modification of biological functions.

For information on the research program and/or positions, contact **L. L. Darrah, Research Leader, tel. 573/882-2349 or E-mail DarrahL@missouri.edu.** For general information on application procedures and forms, contact the **Columbia Administrative Officer, J. L. Fernandez, tel. 573/875-5293, e-mail FernandezJ@missouri.edu.** Applications must be postmarked by August 30, 2001. For information on the DDPSC, see **URL: www.DanforthCenter.org.**

USDA is an equal opportunity provider and employer.

EMBL

Research Programme in Mouse Biology
Monterotondo (Italy)

The European Molecular Biology Laboratory (EMBL), an international research organisation with its Headquarters Laboratory in Heidelberg (Germany), Outstations situated in Grenoble (France), Hamburg (Germany) and Hinxton (UK), and a Research Programme in Mouse Biology at Monterotondo (Italy) has the following vacancy:

GROUP LEADER (ref. 01/119)

Research Programme in Mouse Biology at Monterotondo (Italy)

We are interested in outstanding candidates who focus on the mouse to address important questions in cell and developmental biology, neurobiology, immunology, stem cell biology or aging; functional genomics and models of human disease are topics of special interest. The selected candidate will hold a standard EMBL Group Leader appointment initially for 5 years with the possibility of an extension for another 4 years. He/she will also hold an associate appointment in the EMBL Headquarters Laboratory in Heidelberg, which includes groups working on vertebrate gene expression, cell biology and development.

The EMBL Research Programme in Mouse Biology is situated on the Campus Adriano Buzzati-Traverso at Montertondo (20km north of Rome) next to the European Mutant Mouse Archive (EMMA), the Institute of Cell Biology of the Consiglio Nationale delle Ricerche (CNR) and a unit of the International Centre for Genetic Engineering and Biotechnology. The current research interests of the Mouse Biology Programme include cardiovascular and neuromuscular development, aging and disease (N. Rosenthal, Programme Coordinator), actin cytoskeletal dynamics and related pathologies (W. Witke), cell signalling in the CNS (L. Minichiello), control of cell growth and differentiation by C/EBP transcription factors (C. Nerlov), and NF-kB function in development and disease (M.Pasparakis).

The Mouse Biology Programme offers in-house transgenic and knockout core services, conditional mutagenesis models, and access to the full spectrum of research facilities available at the EMBL Headquarters (Heidelberg), the EBI and the structural biology outstations at Hamburg and Grenoble. The Programme is also participating in a pan-European initiative to coordinate screening and characterization of novel mouse strains and mutants.

EMBL offers a highly collaborative international culture. It is committed to fostering top quality, interdisciplinary research by promoting an exciting and stimulating research environment consisting of young independent research groups with access to outstanding graduates students and postdoctoral fellows. The Laboratory provides financial help in relocating families and additional benefits.

Informal enquiries can be made directly to Dr. Nadia Rosenthal,
tel: +39 06 90091 285, fax +39 06 90091 272,
rosenthal@embl-monterotondo.it

Closing date for applications: 31 October, 2001. The appointment will be available in the spring of 2002.

Applicants should submit a curriculum vitae, quoting reference no. 01/119, with a concise description of research interests and future plans, and should arrange for three letters of recommendation to be sent to:

The Personnel Section, EMBL, Postfach 10.2209, D-69012 Heidelberg, Germany. Fax: +49 6221 387555.
email: jobs@embl-heidelberg.de

TENURE-TRACK POSITION AGE-RELATED NEURODEGENERATION
Department of Physiology and Neuroscience Medical University of South Carolina

The Department of Physiology and Neuroscience at the Medical University of South Carolina seeks to fill one **TENURE-TRACK POSITION**. Rank will be commensurate with experience and the candidates must have a Ph.D. or M.D., a minimum of three years of postdoctoral training, and evidence of the ability to sustain an extramurally funded research program. We are seeking an individual with strong research interests in age-related diseases, primarily Parkinson's and/or Alzheimer's disease; experience in behavioral neuroscience is preferable, but all outstanding candidates are encouraged to apply. Candidates should send curriculum vitae, summary of research interests, and a list of at least three individuals to contact as references to: **Lotta Granholm-Bentley, D.D.S., Ph.D., Search Committee, Department of Physiology and Neuroscience, Medical University of South Carolina, 173 Ashley Avenue, Suite 403, Charleston, SC 29425**. Review of applications will begin on September 1, 2001, and continue until the position is filled. For further information, contact **e-mail: heissenc@musc.edu** and **website: http://www2.musc.edu/PGY/PGY.html**. *Medical University of South Carolina is an Equal Opportunity/Affirmative Action Employer.*

TENURE-TRACK INVESTIGATOR
Mechanisms of Diabetes/Obesity

The Diabetes Branch, NIDDK, NIH, in Bethesda, Maryland, seeks to recruit a tenure-track Scientist (**ASSISTANT PROFESSOR** equivalent) who will use cellular, molecular, and/or genetic approaches to study molecular mechanisms relevant to Type 2 diabetes and/or obesity. The Investigator will be given resources and laboratory space to pursue a vigorous and effective research program. The position offers unparalleled opportunities for multidisciplinary research and for interaction with a diverse group of outstanding Scientists in the NIDDK and throughout the NIH. For information about the NIDDK and the Diabetes Branch, see **website: http://www.niddk.nih.gov**.

Candidates must have a Ph.D., M.D., or equivalent degree in the biomedical sciences, demonstrated research productivity, and capability of establishing an innovative and independent research program. Competitive salary and benefit packages are available. Applicants should send curriculum vitae and list of publications; copies of three major publications; a plan for future research; and three letters of reference by October 15, 2001, to: **Dr. Daniel Camerini-Otero, Search Committee Chair, c/o Ms. Consuelo Holguin, Building 10, Room 8S–235A, 10 Center Drive MSC 1770, Bethesda, MD 20892-1770**.

TENURE-TRACK FACULTY POSITION
University of Colorado Health Sciences Center

The Department of Obstetrics and Gynecology invites applications for a faculty appointment at the level of **ASSOCIATE PROFESSOR** or **PROFESSOR** to serve as Chief of the Section of Basic Reproductive Sciences. Current research interests in the section include signal transduction, gene regulation, steroid hormones and growth factors, cell cycle regulation, and cancer. Applicants should hold a Ph.D., M.D., or equivalent degree and have an extensive record of ongoing, extramurally funded basic research and publication in areas related to women's health. Candidates should possess strong leadership, teaching, and mentoring skills. Submit curriculum vitae, description of research interests, summary of active and pending research grants, and names of three professional references to: **Dr. Ronald S. Gibbs, Chairman, Department of Obstetrics and Gynecology, Campus Box B–198, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, CO 80262**. Position is open until filled.

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

POSITIONS OPEN

ASSISTANT OR ASSOCIATE PROFESSOR OF MEDICINE
Harvard Medical School and Brigham and Women's Hospital

Seeking Assistant or Associate Professor (M.D. or Ph.D.) with independent innovative research program in HIV infection. Investigations may involve structural biology, biochemistry, molecular cell biology, virology, immunology, drug development or resistance, animal models, or clinical materials. Appropriate candidates may be eligible for appointment in the Department of Microbiology and Molecular Genetics and the Virology Program. Candidates should have a strong record of research accomplishment, an interest in teaching, and an ability to work with others in the Harvard Medical School Division of AIDS and the BWH/MGH Partners AIDS Research Program. Interested individuals should respond by September 15, 2001, with a curriculum vitae and brief statement of current research objectives to: **Elliott Kieff, M.D., Ph.D., Chair Search Committee, 181 Longwood Avenue, Boston, MA 02115-2698**. *Harvard Medical School is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are particularly encouraged to apply.*

CHAIR MICROBIOLOGY, IMMUNOLOGY, AND MOLECULAR GENETICS
UCLA School of Medicine

The University of California at Los Angeles invites applications for Chair of the Department of Microbiology, Immunology, and Molecular Genetics (**website: http://www.mimg.ucla.edu/**). The Department is a unique academic unit spanning the College of Letters and Sciences and the School of Medicine and represents an internationally distinguished faculty in the fields of molecular genetics, microbial pathogenesis, immunology, and parasitology.

The successful candidate will have an exceptional record of research accomplishment, the capacity for leadership, and a vision of the unique opportunities presented by the Department to advance this sphere of investigation and education. Nominations, inquiries, letters of interest, and curriculum vitae should be sent to: **Microbiology, Immunology, and Molecular Genetics Search, c/o Jeanette Lim, UCLA School of Medicine, Box 951722, Los Angeles, CA 90095-1722** or to any member of the search committee. *UCLA is an Equal Opportunity/Affirmative Action Employer.*

SCIENTIFIC REVIEW ADMINISTRATOR

The Foundation for Physical Therapy needs a Scientific Review Administrator to manage and develop grants, fellowship, and scholarship programs. Coordinate activities of the scientific review committee; develop and present workshops and conferences; and serve as liaison to the scientific community of physical therapy. Prefer Ph.D., strong grant writing, program planning, excellent oral and written communication skills. Forward curriculum vitae and salary by **FAX: 703-838-8913, e-mail: jobs@apta.org** or send salary to: **APTA, HR, 1111 North Fairfax Street, Alexandria, VA 22314**. *Equal Opportunity Employer.*

CHAIR, CELL BIOLOGY. The University of Medicine and Dentistry of New Jersey (UMDNJ), School of Osteopathic Medicine, is seeking applications and nominations of distinguished academic Scientists with significant research accomplishments in the areas of modern cell biology and specifically in oncology-related areas. Letters of application may be submitted to: **Christine Mackey-Ross, R.N., M.B.A., Witt/Kieffer, 8000 Maryland Avenue, Suite 1080, St. Louis, MO 63105. Telephone: 314-862-1370; FAX: 314-727-5662; e-mail: chrismr@wittkieffer.com**. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY RECRUITMENT IN BIOINFORMATICS
University of California, San Diego Division of Biology

UCSD is making a significant commitment to develop a world-class program in bioinformatics. This is one of six positions that will be recruited across the Divisions of Biology, Physical Sciences, and Engineering in the next three years.

The Division of Biology at UCSD is recruiting a faculty member in the broad area of bioinformatics/functional genomics. This is a shared recruitment between the Sections of Molecular Biology and Cell and Developmental Biology. These Sections have a diverse faculty whose research is directed at understanding basic mechanisms controlling molecular, cellular, and developmental processes. Section faculty participate in one of the largest and most diverse graduate programs in the country. UCSD is home to the San Diego Supercomputer Center and the Protein Data Bank and has recognized bioinformatics as a key interdisciplinary thrust area in which there will be several appointments over the next three years.

We invite applications for a tenure-track/tenured **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** in the area of bioinformatics/functional genomics/proteomics effective summer 2002 dependent on availability of resources. Exceptional candidates with strong research accomplishments in this arrea are encouraged to apply. The successful candidate is expected to develop or continue a vigorous research program and participate in undergraduate and graduate teaching at UCSD. Candidates must have a Ph.D. or equivalent degree. Salary will be commensurate with level of appointment and based on the University of California salary scale.

Applications received by November 15, 2001, will be assured of consideration. Send a letter of application including curriculum vitae; a complete list of publications; a brief description of research interests and professional goals; and the names, addresses, e-mail addresses, telephone and FAX numbers of five references to: **Bioinformatics Search Committee Number 3-893S, c/o Jennifer Roth, Center for Molecular Genetics, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0634**. *UCSD is an Equal Opportunity/Affirmative Action Employer with a strong institutional commitment to the achievement of diversity among its faculty and staff.*

RESEARCH ASSISTANT PROFESSOR

The Division of Pulmonary and Critical Care Medicine at the University of Cincinnati has an immediate opening for a **POSTDOCTORAL FELLOWSHIP**. We are developing an integrated, multidisciplinary, and interactive program in pulmonary innate immunity which will examine lung-pathogen interactions from the perspective of both the host and the microbe. We seek a colleague with expertise in microbial physiology or genetic responses to innate immune cells and antimicrobial proteins. Candidates should have a Ph.D. or an M.D. degree, at least two years of postdoctoral experience, and be fluent in both written and spoken English. Please contact: **Dr. Frank McCormack, University of Cincinnati, P.O. Box 670564, Cincinnati, OH 45267-0564. Telephone: 513-558-4831; e-mail: ravestcd@ucmail.uc.edu**.

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. Outstanding candidates with a strong commitment to research and teaching excellence are encouraged to apply. Submit curriculum vitae, publication list, a description of proposed research, and three letters of recommendation to: **Chair of the Inorganic Chemistry Search Committee, M/C 127-72, California Institute of Technology, Pasadena, CA 91125**. Applications should be received by November 1, 2001. *Caltech is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*

FACULTY POSITION–GENETICS
WEST VIRGINIA UNIVERSITY

West Virginia University, College of Agriculture Forestry and Consumer Sciences, Division of Plant and Soil Sciences, is seeking to fill a tenure-track faculty position in genetics. Nine-month appointment at rank of **ASSISTANT/ASSOCIATE PROFESSOR**. Incumbent will teach an introductory undergraduate course in genetics and, on rotating basis, graduate courses in biochemical genetics and basic concepts of modern genetics. Incumbent will develop an externally funded research program at the cutting edge of modern genetics and establish a graduate program that attracts M.S. and Ph.D. students. Required Ph.D. in genetics or closely related field, established record or outstanding potential for research, effective communication skills. The position is part of an interdepartmental Genetics and Developmental Biology program. Submit application letter with specific information about disciplinary focus, professional activities, and other relevant information; curriculum vitae; transcripts; names, addresses, and telephone numbers of three references; and sample publications to: **Barton Baker, Director, Division of Plant and Soil Sciences, West Virginia University, P.O. Box 6108, Morgantown, WV 26506-6108. Telephone: 304-293-4817, FAX: 304-293-2960; website: http://www.caf.wvu.edu/plsc/index.html**. Applications accepted until October 15, 2001, or until position is filled. Anticipated start date is May 16, 2002, and no later than August 16, 2002. *Women, minorities, and those with disabilities are encouraged to apply. Equal Opportunity/Affirmative Action Employer.*

TENURE-TRACK ASSISTANT PROFESSORSHIP

The Department of Chemistry at the University of San Diego, an independent Catholic university, invites applications for a tenure-track position in biochemistry at the Assistant Professor level beginning fall 2002.

Candidates should have a Ph.D. in biochemistry or chemistry with a strong background in biochemical methods and an ability to teach biochemistry laboratory and lecture courses, introductory chemistry courses, and specialty courses. The candidate should have a strong commitment to quality undergraduate teaching and establishing an active undergraduate research program that includes external support. Teaching experience (one to three years) is preferred. Send curriculum vitae, transcripts (undergraduate and graduate), statement of teaching philosophy, research plans, and three letters of recommendation to: **Chemistry Search Committee, Department of Chemistry, University of San Diego, 5998 Alcala Park, San Diego, CA 92110**. Completed applications should be received by September 30, 2001. *University of San Diego is an Equal Opportunity/Affirmative Action Employer.*

EDITOR-IN-CHIEF

The Ecological Society of America seeks a visionary individual to serve as the founding Editor-in-Chief for Ecos, a new monthly publication of ESA. The interdisciplinary journal will highlight current ecological issues and environmental challenges; provide information for Ecologists, Scientists in related disciplines, and users of ecological information; and will be timely, highly relevant, and readable. The EiC will serve as the leader of the new journal, determine its editorial standards and content, and oversee an editorial board. Applicants should have broad knowledge of ecological topics and their relevance and be familiar with the community of interdisciplinary Scientists contributing to ecological knowledge. Ph.D. in natural sciences or equivalent experience required; experience with scientific publishing highly desirable. Full-time position with competitive salary and benefits. Mail, FAX, or e-mail a cover letter, résumé, and the names of three references to: **EiC Search, Ecological Society of America, 1707 H Street, N.W., Washington, DC 20006. FAX: 202-833-8775; e-mail: resumes@esa.org**. Review of applications will begin September 3, 2001.

POSITIONS OPEN

TWO FACULTY POSITIONS
Evolutionary Genomics and Evolution of Development and Complexity
Department of Ecology and Evolutionary Biology
The University of Arizona

Evolutionary Genomics: We are interested in applicants who will establish research programs of originality and depth in the area of genomics and bioinformatics in an evolutionary context (with possible connections to molecular evolution and the diversification of life).

Evolution of Development and Complexity: We are interested in applicants who will establish research programs of originality and depth in the area of the evolution of development and complexity (with possible connections to major evolutionary transitions, biochemical innovation, the origin of life, and life elsewhere such as *in silico*, biospheres, and astrobiology).

Our preference is to hire for both positions at the **ASSISTANT PROFESSOR** level, but appointment at the higher **ASSOCIATE** or **FULL PROFESSOR** rank is a possibility and those candidates are welcome to apply. Candidates working with any taxa and any combination of laboratory, field, or theory-based methods are welcome to apply. The successful candidates will be expected to teach at undergraduate and/or graduate levels and to develop an externally funded research program. A Ph.D. in a related field is required.

To apply for the first position in evolutionary genomics, please send the following to: **Dr. Howard Ochman, Chair, Evolutionary Genomics Search Committee, Department of Ecology and Evolutionary Biology, The University of Arizona, P.O. Box 210088, Tucson, AZ 85721-0088**: curriculum vitae; statements of research and teaching interests; and a one-page cover letter in which you indicate (1) your specific area of research interest; (2) the significance of your work in addressing major questions in ecology and evolutionary biology; and (3) the names, titles, and addresses (including e-mail) of four individuals who can evaluate your work and its significance (also please arrange for the letters to be sent). Please send no more than four reprints.

To apply for the second position in evolution of development and complexity, please send the application materials listed above to: **Dr. Bruce Walsh, Chair, Evolutionary Development Search Committee, Department of Ecology and Evolutionary Biology, The University of Arizona, P.O. Box 210088, Tucson, AZ 85721-0088.**

Review of application materials will begin August 20, 2001, and will continue until the positions are filled. Visit **website: http://eebweb.arizona.edu/** for updated information. *The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer; Minorities/Women/Disabled/Veterans.*

DEAN
College of Natural Resources
University of Idaho

The University of Idaho invites applications for the position of Dean of the College of Natural Resources. See **website: http://www.uidaho.edu/cnr** for full vacancy announcement/position description. Selection of candidates will begin September 30, 2001, and will be concluded when a sufficient number of qualified applicants are identified. Letters of application should include curriculum vitae and the names, mailing and e-mail addresses, and telephone numbers of three references and should be sent to:

Dr. Earl Bennett, Chair
Natural Resources Dean Seach Commitee
University of Idaho
P.O. Box 443025
Moscow, ID 83844-3025
Telephone: 208-885-6195
E-mail: mines@uidaho.edu

To enrich education through diversity, the University of Idaho is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

DEPARTMENT CHAIR

Applications and nominations are invited for the 12-month, tenure-track position of Chair of the Department of Biochemistry. Required qualifications include a Ph.D. in biochemistry or closely related field and an outstanding record of scholarly achievement (including research, teaching, and outreach) and extramural funding that would qualify the individual for appointment at the **FULL PROFESSOR** level. Administrative abilities in budgetary and personnel management are required.

The Chair will provide leadership for academic programs of research, undergraduate program development, graduate education, and outreach activities. Duties include administration of a multidisciplinary department consisting of agricultural and biomedically related sciences (including plant, insect, animal biochemistry, and molecular biology). The Chair will serve as Departmental Head with full responsibility for fiscal and personnel management within the Department. The Chair represents the Department to college, university, agricultural, medical, public, and governmental constitutents; promotes teamwork and individual contributions; develops an internal organizational structure to accomplish the Department's mission; and helps establish a culture of academic excellence.

Candidates should submit (1) a letter of interest, including a statement of vision for teaching, research, outreach, leadership philosophy, and qualifications and (2) curriculum vitae. References will be requested only from candidates selected for interview. Please send applications to:

Samantha L. Hoole, Search Coordinator
College of Agriculture, Biotechnology, and Natural Resources, MS 222
University of Nevada, Reno
Reno, NV 89557
Telephone: 775-784-1610
FAX: 775-327-2275
E-mail: shoole@cabnr.unr.edu

For full consideration, applicants should have all application information on file no later than October 1, 2001.

Equal Employment Opportunity/Affirmative Action.

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

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 2002. Appointment at a tenured level would be considered in exceptional circumstances. Creative and energetic candidates who show extraordinary promise or accomplishment in research and teaching are specifically sought in the fields of organic and physical chemistry, although truly outstanding candidates in any area of chemistry will be considered. 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 613), Department of Chemistry, University of California, Berkeley, CA 94720-1460**. The deadline for receipt of applications is November 1, 2001; applications will be reviewed beginning September 1, 2001. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

LABORATORY INSTRUCTOR MOLECULAR BIOLOGY AND GENETICS

We are seeking a Laboratory Instructor for undergraduate courses in molecular biology and genetics. Organizational ability, strong interpersonal skills, and a sincere interest in undergraduate teaching are required. Applicants that have an M.S. or Ph.D. degree in molecular biology or genetics are preferred; however, applicants without an advanced degree but with equivalent laboratory and/or teaching experience will also be considered. Please send a letter of interest and curriculum vitae (with names of two to three references) to: **Chair of Laboratory Instructor Search Committee, Department of Biological Sciences, Dartmouth College, Hanover, NH 03755**.

Research the Possibilities...

...with an internationally renowned biomedical research institution.

St. Jude Children's Research Hospital is known throughout the scientific and biotech community as a prestigious biomedical research center devoted to understanding the molecular, genetic and chemical bases of catastrophic diseases in children, identifying cures for such diseases and promoting their prevention. St. Jude is actively pursuing candidates, for the following positions, with the skills and ambition essential to push the limits of science.

- **High Throughput DNA Sequencing and Genotyping Analyst III (5394VH)**
- **Proteomics Analyst III (5382VH)**
- **Cell Culture Section Head, Therapeutics Prod. & Human App. Lab (3426SR)**
- **Transduction Specialist, Therapeutics Prod. & Human App. Lab (3389SR)**
- **Stem Cell Processor, Therapeutics Prod. & Human App. Lab (1950SR)**
- **Research Lab Specialists**
  - **Genetics (6127SR)**
  - **Immunology (6582SR)**
- **Sr. Research Technologists**
  - **Infectious Diseases & Pharmaceutical Science (6252SR)**
  - **Molecular Pharmacology (2948SR)**
  - **Immunology (6577SR)**
  - **Pharmaceutical Sciences (5079SR)**
  - **Infectious Diseases (4911SR)**
  - **Structural Biology (3137SR)**

For immediate consideration, please send resume, indicating position of interest and Job Code, via e-mail: research.careers@stjude.org or fax: 901-495-3123.

For detailed information on these and other current opportunities with St. Jude, please visit our web site.

www.stjude.org/hr

St. Jude Children's Research Hospital

ALSAC • Danny Thomas, Founder

Photos courtesy of St. Jude Biomedical Communications.

Equal Opportunity Employer

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www.forsyth.org

RESEARCH SCIENTIST

The Forsyth Institute is the world's leading independent organization dedicated to research and education in oral, craniofacial, and related biomedical science. Visit our website to learn more about our institution and its people.

A tenure-track staff position is currently available in The Department of Biomineralization of The Forsyth Institute. Forsyth investigators conduct innovative research in oral and craniofacial biology and related biomedical sciences. Individuals interested in developing multi-disciplinary collaborative research related to matrix-mediated biomineralization and mineralized tissue formation are encouraged to apply. Candidates should have a Ph.D. degree in Chemistry, Biophysics, or Biochemistry and have relevant postdoctoral training. Experience in mineralized tissue research, protein structure characterization or molecular biology is highly desirable.

Interested candidates should send a curriculum vitae and the names of three references to:
Henry C. Margolis, Ph.D., Head, Department of Biomineralization, The Forsyth Institute, 140 The Fenway, Boston, MA 02115. FAX: 617-247-9683; email: hmargolis@forsyth.org.

The Forsyth Institute

NC STATE UNIVERSITY

TWO TENURE TRACK POSITIONS IN ANIMAL / MICROBIAL GENOMICS

The **College of Veterinary Medicine at North Carolina State University**, located in the Research Triangle, invites applications for two open-rank faculty positions in Animal / Microbial Genomics. This recruitment is part of a University-wide initiative in genomic sciences. Successful applicants for these two positions will establish the core of an expanding group of genomic scientists to be housed within a new 100,000 square foot research building at the College of Veterinary Medicine. North Carolina State University's strengths in Genomics include major research programs in microbial and plant genomics, a state-of-the-art Genome Research Laboratory with high-speed sequencing and microarray robotics facilities (http://www.cals.ncsu.edu./grl), University-wide graduate programs in Functional Genomics and Bioinformatics (http://genomics.ncsu.edu/), and a multimillion dollar training grant for graduate education in genomic sciences from the National Science Foundation. Applicants must have a Ph.D. and postdoctoral research experience that demonstrates a strong commitment to the application of Genomics to problems of significant biological interest. Successful applicants are expected to establish independent, extramurally funded research programs that focus on basic science issues of relevance to animals. Research areas of special interest include, but are not limited to: (1) genomics of inherited or acquired genetic diseases; (2) genomics of infectious agents that cause animal or human disease; (3) genomics of resistance to infectious agents or environmental toxicants; (4) use of transgenic animal models for improved health and drug development. Successful applicants will also be expected to participate in graduate education and training and participate in other instruction related to the missions of the Departments and College. One faculty position will be within the Department of Microbiology, Pathology and Parasitology (http://www.cvm.ncsu.edu/info/departs/mpp.html) and one will be within the Department of Anatomy, Physiological Sciences and Radiology (http://www.cvm.ncsu.edu/apr). Positions are tenure-track, available July 1, 2002, with rank and salary commensurate with experience. Screening of applications will begin September 1, 2001 and will continue until suitable candidates are selected. Applicants should send a letter outlining their research interests, qualifications, experience, and career goals related to the position, curriculum vitae, and the names, addresses, and telephone numbers of three references to: **Dr. Barbara Sherry, Department of Microbiology, Pathology, and Parasitology, College of Veterinary Medicine, North Carolina State University, 4700 Hillsborough Street, Raleigh, NC 27606. Additional information may be obtained from Dr. Sherry at the above address, by phone at 919-515-4480, or email: barbara_sherry@ncsu.edu.**

North Carolina State University is an AA/EOE. Individuals with disabilities desiring reasonable accommodations in the application process should phone Dr. Lance Perryman at 919-513-6250, FAX 919-513-6455 or TDD 919-515-9617

THE UNIVERSITY OF ARIZONA
TUCSON ARIZONA

FACULTY POSITIONS
Department of Pharmacology and Toxicology
College of Pharmacy
The University of Arizona

The Division of Medicinal and Natural Products Chemistry, College of Pharmacy, the University of Arizona, invites applications for two **ASSISTANT/ASSOCIATE PROFESSOR** tenure-track faculty positions for the 2002 academic year. One position is for medicinal chemistry and the other for natural products chemistry. Applicants must have a Ph.D. or Pharm. D. and relevant postdoctoral experience. Individuals with interests in any area of medicinal and natural products chemistry will be considered, but the following and related areas are of particular interest during this phase of our expansion: proteomics, functional genomics, chemical biology, enzymology, structure-based drug design, natural products chemistry, phytomedicine, and pharmacognosy. Successful candidates will be expected to develop an independent research program, obtain extramural funding, and actively participate in professional and graduate teaching. The Medicinal and Natural Products Chemistry Division has undergone a dynamic period of growth in the past two years with the addition of five new faculty members. An excellent opportunity exists for participation in the Center for Toxicology, the Arizona Cancer Center, the Arizona Center for Phytomedicine Research, and other Centers of Excellence at the University of Arizona and the Arizona Health Sciences Center. We offer excellent benefits and competitive salaries. Applications will be reviewed beginning November 1, 2001, and will continue until the positions are filled. Applicants should submit an application letter, curriculum vitae, copies of two publications, statement of research interests, and the names (and contact information) of three to five references to: **AHSC Human Resources, Job Number 993589, 1501 North Campbell Avenue, #2233, P.O. Box 245010, Tucson, AZ 85724-5010.** *The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer: Minorities/Women/Disabled/Veterans.*

ASSISTANT PROFESSORSHIPS
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 outlines of two 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.** *Harvard University is an Affirmative Action/Equal Opportunity Employer and welcomes applications from women and minority group members.*

A nontenure-track faculty position at the level of **RESEARCH ASSISTANT PROFESSOR/RESEARCH INSTRUCTOR** is available immediately in the Department of Cell Biology to study ionic transport by the polycystins and TRP channels (see *PNAS* **94:**6965, 1997; *PNAS* **96:**3934, 1999; *Nature* **408:**990, 2000). Applicant must have demonstrated experience in electrophysiologic characterization of channel proteins. Support will be provided through the John S. Gammill Endowed Chair in Polycystic Kidney Disease. Interested candidates should send curriculum vitae including the names and addresses of three references to: **Leo Tsiokas, Ph.D., Department of Cell Biology, BSEB 302E, The University of Oklahoma Health Sciences Center, 941 S. L. Young Boulevard, Oklahoma City, OK 73104. E-mail: leonidas-tsiokas@ouhsc.edu.**

POSITIONS OPEN

ASU

MOLECULAR NEUROSCIENTIST
Arizona State University
Main Campus

The Department of Biology invites applications for a tenure-track **ASSISTANT PROFESSOR** in any area of experimental neuroscience beginning fall 2002. A Ph.D. and postdoctoral experience in molecular neuroscience or a related field are required. The candidate will use molecular approaches to understand basic questions in neuroscience and will have the opportunity to participate in several interdisciplinary research groups including a graduate program in molecular and cellular biology and the newly established Arizona Biomedical Institute. The candidate is expected to establish a vigorous, externally funded research program; participate in undergraduate and graduate teaching programs; and participate in university and professional service. For information on resources, see **website: http://lifesciences.asu.edu**. Applicants must submit (1) curriculum vitae; (2) a statement of research accomplishments and future directions; (3) a statement of teaching experience and interests; and (4) names, addresses, telephone numbers, and e-mail addresses of at least four references to: **Molecular Neuroscientist Search Committee, Department of Biology, Arizona State University, Box 871501, Tempe, AZ 85287-1501. FAX: 480-965-2519**. Applications from two individuals wishing to share the appointment will be considered. Application deadline is 1 October 2001 or applications will be reviewed weekly therafter until the position is filled. *Arizona State University is an Affirmative Action/Equal Opportunity Employer.*

THE UNIVERSITY OF CHICAGO

The Committee on Human Development of the University of Chicago invites applications for a **TENURE-TRACK POSITION** (rank open) in the biosocial psychology area. The Committee on Human Development is an independent, interdisciplinary research and academic Ph.D.-granting unit at the University of Chicago with broad interests in social, psychological, biological, and cross-cultural aspects of behavior. For this position, we are seeking a Biopsychologist or other scholar with an interest in studying human development from a biological perspective. The ideal candidate would thrive in an interdisciplinary research environment and would be able to access many research resources at the University of Chicago including the newly established Institute for Mind and Biology. He or she will be expected to maintain a strong research program, seek extramural funding, and participate in undergraduate and graduate teaching. Junior candidates for this position should show some evidence of research productivity. Applicants should submit their curriculum vitae, statement of research and teaching interests, and the names of three references to: **Biosocial Psychology Search Committee. Committee on Human Development, The University of Chicago, 5730 South Woodlawn Avenue, Chicago, IL 60637**. The deadline for application is November 1, 2001.

POSTDOCTORAL POSITIONS

Two Postdoctoral positions are available in the Department of Psychiatry to study molecular mechanisms in Alzheimer's disease neurodegeneration using proteomic and genomic approaches. The successful candidates must have demonstrated knowledge in molecular biology and in protein chemistry. Send curriculum vitae to: **Giulio Maria Pasinetti, M.D., Ph.D., Director, Neuroinflammation Research Center, Department of Psychiatry, Box 1230, The Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029. E-mail: gp2@doc.mssm.edu.**

POSITIONS OPEN

ASSOCIATE DEAN, PROFESSOR OF FISHERIES, School of Fisheries and Ocean Sciences, University of Alaska Fairbanks.

Responsibilities: This executive-level position is responsible for administrative leadership in the School of Fisheries and Ocean Sciences (SFOS). Administrative focus for the position includes promoting coordination among faculty, units, and SFOS programs; assisting in development and evaluation of SFOS programs; coordinating research planning with state and federal agencies; basic administrative functions (review research proposals, etc.); liaison with external fisheries constituents; serving on committees and performing public service at state, national, and international levels; other functions as needed or assigned in response to changing needs of the School.

The Associate Dean position also provides flexibility to pursue teaching and research interests. It is anticipated the successful candidate will provide instruction in courses (undergraduate or graduate level) related to his/her field of knowledge. The incumbent will be encouraged to continue scholarly work and research activities including supporting graduate students.

Qualifications: earned Doctorate in fisheries, fisheries oceanography, or a related field. The successful candidate will have a strong background in research and teaching with a strong publication record appropriate to a leader in his/her field.

Salary: will be competitive and commensurate with qualifications and experience. Closing date: August 18, 2001.

Contact: Applicants should send curriculum vitae, a brief summary of teaching and research interests, contact information for at least three professional references, and a signed University of Alaska application to: **Dr. Alexander, AD Search Committee, Dean's Office/SFOS, University of Alaska Fairbanks, Fairbanks, AK 99775-7220**. UAF employment applications can be found at **website: http://www.alaska.edu/hr/employment_application.htm**. *Equal Employment Opportunity/Affirmative Action Employer.*

EXECUTIVE EDITOR

The Journal of Clinical Investigation (JCI), one of the leading biomedical research journals in the world, is seeking an Executive Editor. Prior experience in scientific publishing and an advanced degree (Ph.D. or M.D.) are preferred. The Executive Editor will work closely with the JCI editorial board at Columbia University, will represent the Journal at scientific meetings, and will help develop and implement changes to the editorial content of the Journal. Please send résumés to: **Dr. Andrew R. Marks, JCI Editor, Box 65, Columbia University, 630 West 168th Street, New York, NY 10032. FAX: 212-305-3690; e-mail: arm42@columbia.edu.**

A **POSTDOCTORAL POSITION** is available immediately in an NIH-funded project to study signaling pathways involved in G protein-coupled receptor-induced chemokine gene expression in leukocytes. Experience in molecular biology is essential. Please send curriculum vitae to: **Hydar Ali, Ph.D., Department of Pathology, University of Pennsylvania School of Dental Medicine, 4010 Locust Street, Philadelphia, PA 19104-6002. E-mail: ali@path.dental.upenn.edu.**

Two **POSTDOCTORAL POSITIONS** available to investigate in the area of mesenchymal stem cell differentiation. Strong background in molecular biology is essential. Contact: **Dr. Lucia Schuger, Wayne State University School of Medicine, Department of Pathology, 540 East Canfield Avenue, Detroit, MI 48201. E-mail: lschuger@med.wayne.edu/** *Wayne State University is an Equal Opportunity Employer/Affirmative Action.*

SCIENTISTS

Join a company creating a new generation of drug delivery systems

Protein Delivery Systems/Biomaterials

Responsibilities include developing sustained delivery formulations for proteins and other macromolecules and evaluating biomaterials. Requirements include a Ph.D. in chemistry, chemical or bioengineering, biochemistry or materials science and 2-5 years' research/product development experience preferably in the biotechnology or pharmaceutical industry.

Pharmacology

Responsibilities include in vivo experiments examining our drug delivery technologies including pulmonary delivery and sustained release microsphere technologies. Requirements include a Ph.D. preferably in biology and 2-5 years' in vivo research experience.

Toxicology

Responsibilities include conducting regulatory toxicology programs to support registration of pharmaceutical formulations. Requirements include a Ph.D. in biology or a DVM and at least 2 years' toxicology experience.

Pharmacokinetics

Responsibilities include in-depth pharmacokinetic analysis of data from preclinical and clinical studies. Requirements include a Ph.D in pharmacokinetics/biopharmaceutics and at least 2 years' PK modeling experience including PK software such as PC WinNonlin.

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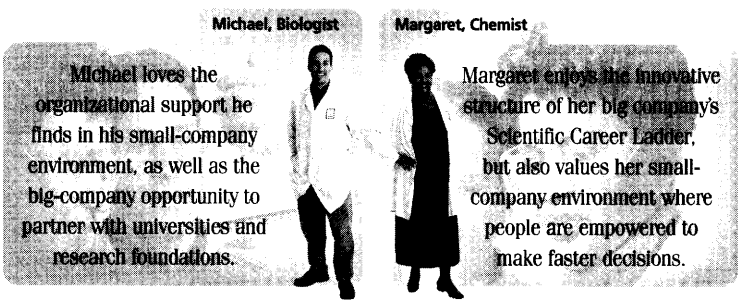

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The R.W. Johnson Pharmaceutical Research Institute, located in Raritan, New Jersey, conducts pharmaceutical research in therapeutic areas including anti-infectives, central nervous system, endocrinology and oncology.

Biostatistician (Req Code:01-2491SCI)

In this challenging role, you will develop biostatistical tools to resolve problems in the pharmacogenomics area and perform tests based on data from drug trials. This involves producing analyses to support the development of drug evaluation compounds; preparing statistical analysis for incorporation into clinical study reports and regulatory dossiers; and introducing new statistical and study designs into the drug evaluation process. You'll also train and support research scientists in the pharmacogenomics and biometrics group.

To qualify, you must have a Ph.D. in statistics and experience in statistical genetics and genetic epidemiology as well as a strong understanding of preclinical and clinical research, regulatory affairs and data reporting. Knowledge of statistical techniques relating to genetics, genomics and genetics of quantitative traits is required. Excellent organizational, interpersonal and oral/written communications skills are essential.

Visit **www.jnj.com/careers** to explore Johnson & Johnson and to establish a profile with our *Career Finder* system. Please reference company and requisition code with all specific applications. Hard copy resumes can be mailed to Johnson & Johnson Recruiting, P.O. Box 16597, New Brunswick, NJ 08906-6597.

FACULTY POSITION
Diagnostic Molecular Pathology
Department of Pathology
University of Virginia Health System

The University of Virginia Department of Pathology seeks a highly qualified individual with an M.D. or M.D./Ph.D. for a tenure-track faculty appointment in its Division of Clinical Pathology. The successful candidate will serve as Director of the Diagnostic Molecular Pathology Laboratory and will be expected to conduct an independent, extramurally funded research program. The appointee will participate in the Department's teaching activities for residents and medical and graduate students. The Department and the Medical Center are committed to sustaining a state-of-the-art clinical laboratory for diagnostic nucleic acid testing and to providing excellent research laboratory space and equipment, very competitive compensation, and a generous start-up package. The successful applicant will join an active and collegial Department in the beautiful community of Charlottesville. Additional information may be found at **website: http://www.med.virginia.edu/molecpath**. Applicants should send curriculum vitae, statement of recent accomplishments and plans, and the names and addresses of three references to: **Paul D. Mintz, M.D., Director of Clinical Pathology, University of Virginia Health System, Old Medical School Room 3812, P.O. Box 800286, Charlottesville, VA 22908**. *UVA is an Equal Opportunity/Affirmative Action Employer.*

DIRECTOR, GRADUATE PROGRAM IN NEUROSCIENCE

The Florida State University invites applications to fill a tenured, senior-level position in either psychology or biological science and oversee and coordinate the activities of the University's longstanding interdepartmental program in neuroscience. We seek an internationally recognized scholar (area of research open) with strong leadership skills and a vision for the future of graduate training and research in neuroscience. The Director is expected to lead a vibrant and cutting edge personal research program and to participate in teaching. The program holds two NIH training grants and consists currently of 21 faculty members and 30 graduate students distributed among psychology and biological sciences in the College of Arts and Sciences, Nutrition, Food, and Exercise Sciences in the College of Human Sciences; and the newly created College of Medicine. Send curriculum vitae, selected reprints, statements of anticipated research direction and administrative style/philosophy, and the names of at least three references to: **Neuroscience Director Search Committee, Department of Psychology, Florida State University, Tallahassee, FL 32306-1270**. Review of applications will begin on 5 October 2001. For information on the program, see **website: http://www.neuro.fsu.edu**. *Florida State University is an Equal Opportunity/Affirmative Action Employer committed to diversity in hiring and a Public Records Agency.*

RESEARCH OPPORTUNITIES

The University of Massachusetts Medical School in Worcester, Massachusetts has built a reputation as a world class research institution, consistently producing noteworthy advances in clinical and basic research. UMMS has openings for experienced and entry-level **RESEARCH TECHNICIANS** who must have at least a B.S./B.A. in a scientific discipline to qualify. Openings in Worcester and Waltham, Massachusetts, and Jamaica Plain, New York.

We offer competitive salaries based on experience; an excellent benefit package, paid continuing education benefits for employees and family members, and health and dental coverage.

Please plan to visit us at the *Science* Career Fair on August 13, 2001, at the Boston Seaport Hotel or log on to our **website: http://www.umassmed.edu**. To apply, **e-mail** résumés to: **jobs@umassmed.edu; FAX: 508-856-2390**; mail to: **UMMS, 55 Lake Avenue North, Worcester, MA 01655**. Job Code: JF/SCF. *We are an Equal Opportunity Employer.*

POSITIONS OPEN

TENURE-TRACK POSITION
University of Saskatchewan
Department of Biochemistry

Plant Biochemistry/Biotechnology: The Department of Biochemistry invites applications for a tenure-track position as **ASSISTANT PROFESSOR** in plant biochemistry/biotechnology. A Ph.D. and postdoctoral experience in plant biochemistry or biotechnology is preferred. However, applicants with outstanding research records in any discipline of plant science are encouraged to apply. The successful applicant is expected to establish a strong, independent, and externally funded research program. In addition, participation in both the biochemistry (**website: www.usask.ca/medicine/biochem**) and biotechnology (**website: http://biotechnology.usask.ca/**) programs as well as teaching at the undergraduate and graduate levels will be required. The University of Saskatchewan has a long-standing reputation in the plant sciences including affiliation with nearby government facilities such as the National Research Council of Canada, Plant Biotechnology Institute (**website: http://www.pbi.nrc.ca/**) and Agriculture and Agri-Food Canada (**website: http://res2.agr.ca/saskatoon/**). The existence of two new facilities, the Canadian Light Source (**website: http://www.cls.usask.ca/**) and the Saskatchewan Structural Sciences Centre (**website: http://www.usask.ca/sssc/**) will provide the appointee with access to state-of-the-art equipment. Review of applications will begin September 1, 2001, and continue until suitable candidates are identified. The anticipated date of appointment is January 1, 2002. Interested individuals should submit an application including a summary of research and teaching goals and curriculum vitae as well as the names and e-mail addresses of three references to: **Dr. L. T. J. Delbaere, Head, Department of Biochemistry, College of Medicine, University of Saskatchewan, 107 Wiggins Road, Saskatoon, SK S7N 5E5 Canada. E-mail: louis.delbaere@usask.ca**. *Members of designated groups (women, aboriginal people, people with disabilities, and visible minorities) are encouraged to apply. The University of Saskatchewan is committed to Employment Equity.*

RESEARCH ASSOCIATE
Wright State University
School of Medicine

Research Associate position available immediately to study ion channel expression in neurons using electrophysiological and immunohistochemical techniques. Candidates must have a Ph.D. and related experience in the field of neuroscience. Send curriculum vitae and three letters of recommendation by August 15, 2001, to: **Dr. Robert Fyffe, Center for Brain Research, Wright State University, School of Medicine, 3640 Colonel Glenn Highway, Dayton, OH 45435. E-mail: robert.fyffe@wright.edu; FAX: 937-775-3009**. *Wright State University is an Affirmative Action/Equal Opportunity Employer.*

Positions available for **MOLECULAR BIOLOGISTS, PROTEIN BIOCHEMISTS**, and **BIOINFORMATICISTS**. A Ph.D. and/or zero to three years of experience are required. Experience with various vectors/systems (preferably baculovirus) and with GPCRs or enzymes is helpful. A fast-paced entrepreneurial environment and an excellent compensation package. Submit curriculum vitae to: **Human Resources, Consensus Pharmaceuticals, Inc., 200 Boston Avenue, Suite 2900, Medford, MA 02155. FAX:781-306-1446;e-mail:hr@consensus-pharm.com**.

FACULTY POSITIONS
STATISTICAL GENETICS/GENOMICS
University of Alabama at Birmingham (UAB)

The Department of Biostatistics has tenure-track openings in statistical genetics/genomics. Positions are at an open level (**ASSISTANT, ASSOCIATE, FULL**) depending on candidate qualifications. For more details, see **website: http://phealth.soph.uab.edu/BSTpositions/** or contact: **David B. Allison; e-mail: dallison@uab.edu**.

UAB is an Equal Opportunity Employer. Women, minorities, and persons with disabilities are encouraged to apply.

POSITIONS OPEN

STAFF SCIENTIST POSITIONS
Pohang Accelerator Laboratory
Pohang University of Science and Technology
Pohang, 790-784, Korea

The Pohang Light Source (PLS) at Pohang Accelerator Laboratory (PAL), operated by the Pohang University of Science and Technology (POSTECH) in Korea, is a third-generation synchrotron radiation facility with electron beam energy up to 2.5 GeV. We are inviting Staff Scientists in various research areas including physics, chemistry, life science, materials science, and chemical and environmental engineering. The successful candidates are expected to play leading roles in developing and constructing new beam lines as well as conducting research and development activities using PLS.

The currently operating beam lines include X-ray microprobe, photoemission, EXAFS, X-ray scattering, PEEM, SAXS, macromolecular crystallography, and LIGA. There are also several new beam lines under construction such as power diffraction, superconducting wiggler, and two soft X-ray undulator beam lines for surface studies. Experiences with synchrotron radiation are desirable but not required. Depending on qualification of the candidate, joint appointment to the POSTECH faculty position can be arranged. Applicants should send their curriculum vitae, list of publications, and statement of research interests to: **Dr. Hwa Shik Youn, Pohang Accelerator Laboratory, POSTECH, San 31, Hyoja-dong, Pohang 790-784, Korea. Telephone: +82-54-279-1532; FAX: +82-54-279-1599; e-mail: hsyoun@postech.ac.kr.**

FACULTY POSITIONS
ECOLOGY, BEHAVIOR, AND EVOLUTION
University of California, San Diego

The Section of Ecology, Behavior, and Evolution in the Division of Biology at UCSD invites applications for several new faculty positions. Rank is open and appointment level will be commensurate with qualifications and experience with salary based on University of California pay scales. The areas of scholarship are open but we are interested in strengthening the four broadly defined research areas in which current faculty interact: conservation science, dynamic biogeography, molecular evolution, and behavior. 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 beginning September 14, 2001, and accepted until the positions are filled. Send curriculum vitae, publication list, synopsis of professional goals, research, and teaching interests, and three letters of reference (mailed directly) as soon as possible to: **Ecology, Behavior, and Evolution Search Committee Number 3-894S, Division of Biology 0346, 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. Applications from women are especially encouraged.*

RESEARCH ASSISTANT

Positions are available on an ongoing basis within different research groups in the Institute of Molecular Biology and the Institute of Neuroscience at the University of Oregon. The purpose of this notice is to establish and maintain a pool of qualified applicants. A minimum of a B.A. or B.S. in biology, chemistry, neuroscience, or related field is required. Please see our **websites: http://www.molbio.uoregon.edu** and **http://www.neuro.uoregon.edu** for information about the type of research being done. Salary dependent upon experience. For application materials, please **Telephone: 541-346-5151; e-mail: rita@prospero.uoregon.edu**. *The University of Oregon is an Equal Opportunity/Affirmative Action Institution committed to cultural diversity and compliance with the Americans With Disabilities Act. Women and minorities are encouraged to apply.*

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If unable to attend career fair please forward resumes to: Human Resources, The WYETH Genetics Institute Campus at Andover, One Burtt Rd., Andover, MA 01810. Email: jobs@labs.wyeth.com

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CELLULAR/MOLECULAR TOXICOLOGIST
Department of Pharmacology and Toxicology
University of Mississippi Medical Center

The Department of Pharmacology and Toxicology immediately invites applications for a tenure track position that is available. Rank of entry will be commensurate with the qualifications of the applicant. Candidates will be expected to develop a strong, extramurally fundable research program in the general area of toxicology. The research would have an emphasis on cellular and/or molecular biological mechanisms of action of xenobiotics complementary to current research in the department. The candidate also will participate in the teaching of graduate, medical, and dental students.

The minimum qualifications for applicants are a Ph.D. or equivalent in toxicology, pharmacology, biochemistry, or a related field and one to two years of postdoctoral experience. Applicants should submit curriculum vitae and a description of future research plans and teaching interests by November 1, 2001, to:

Chairman, Faculty Search Committee
Department of Pharmacology and Toxicology
University of Mississippi Medical Center
2500 North State Street
Jackson, MS 39216-4505

In addition, the applicant should request that three letters of recommendation be sent directly to the above address. *Equal Opportunity Employer, M/F/D/V.*

TECHNOLOGY SPECIALIST
INTELLECTURAL PROPERTY RIGHTS

A Nashville, Tennessee-based company dedicated to serving the needs of agriculture has a position immediately available for a Technology Specialist in the area of intellectual property rights. The successful candidate will assist in the management of intellectual properties associated with an international agriculture based business in a changing and challenging environment. In addition the candidate will have a Ph.D. or equivalent experience in a relevant discipline (biochemistry, cellular biology, genetics, or molecular biology). Pharmaceutical or agricultural industrial experience, familiarity with agricultural scientific research, or familiarity with issues surrounding patent law are highly desired. The candidate must exhibit excellent communication skills in both technical and business circles. Applicant will also be expected to interact with internal and external Scientists as well as with federal, state, local, and international agencies that impact our business. Domestic and international travel will be required. Interested candidates should send their résumé with salary requirements and references to:

IPR Technology Specialist
P.O. Box 23650
Nashville, TN 37202

Equal Employment Opportunity Minorities Females Veterans Disabilities.

ASSISTANT PROFESSOR (tenure track) of molecular genetics, Dairy Science Department, University of Wisconsin–Madison. Full-time, 12-month position; 65% research, 35% instruction. Require Ph.D. degree in animal or dairy science, genetics, or related area with expertise on QTL identification, fine mapping, or functional genomics and interest in integrating molecular genetics into breeding programs. The incumbent will establish an extramurally funded research program addressing genetic improvement of dairy cattle using molecular genetics. Teaching includes an undergraduate course in animal breeding, graduate course in the candidate's area of expertise, and direction of graduate student research. Teaching and postdoctoral experience preferred. Position available immediately. To ensure consideration, applications must be received by September 30, 2001. Send letter of application, resume, transcripts of all university work, and four letters of reference to: **Dr. George Shook, Dairy Science Department, 1675 Observatory Drive, Madison, WI 53706. Telephone: 608-263-3486; FAX: 608-263-9412; e-mail: shook@calshp.cals.wisc.edu**. *The University of Wisconsin is an Equal Opportunity Affirmative Action Employer.*

POSITIONS OPEN

An **ASSISTANT RESEARCH SCIENTIST** position is available to participate in the identification, characterization, and validation of potential drug targets in pancreatic cancer. The individual will conduct and supervise research involving the examination of gene expression profiles in normal pancreas and pancreatic cancer cells taken from patients using cDNA microarrays or other advanced methodologies. The analysis of these gene expression patterns will be used to identify novel gene product targets for drug development. Once novel targets are identified, experiments designed to establish the biological function of these targets will be performed. Interested applicants should have a Ph.D. and/or M.D. degree and research experience in cancer molecular biology. Postdoctoral experience in molecular biology is preferred. The individual must have experience with the following laboratory techniques: cloning, PCR, library screening, tissue culture, Western and Northern blots, immunohistochemistry, and protein purification. Please send a letter stating research interests, curriculum vitae with past research experience, and contact information for three references to:

Daniel D. Von Hoff, M.D.
Arizona Cancer Center
1515 North Campbell Avenue
Tucson, AZ 85724
FAX: 520-626-6898
E-mail: dvonhoff@azcc.arizona.edu

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

ASSISTANT PROFESSORSHIPS
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 target-oriented and diversity-oriented synthetic organic chemistry, advanced organic materials, chemical genetics, mechanistically focused genomics and proteomics, and macromolecular structure and function, although candidates in all areas of organic chemistry, broadly speaking, will be considered.

Applicants should arrange to have three letters of recommendation sent independently and should provide curriculum vitae, a list of publications, and outlines of two future research projects. Applications and supporting materials should be sent to: **Chair, c/o Ms. Carol Gonzaga, Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138-2902**. *Harvard University is an Affirmative Action/Equal Opportunity Employer and welcomes applications from women and minority group members.*

ASSOCIATE RESEARCH SCIENTIST

The Department of Pathology at Columbia University is seeking to recruit an outstanding Scientist for a non-tenure-track position of Associate Research Scientist to study cell and molecular biology of Alzheimer's disease. A Ph.D. degree and three years of postdoctoral research experience are required, and applicants should have experience with generation and characterization of transgenic mice. The selected candidate will investigate the regulatory mechanism of Alzheimer-associated proteases. All areas of neurodegenerative research will be considered, but individuals who have research experience on calpain and related proteases are particularly encouraged to apply. Prospective candidates should submit curriculum vitae with two references to:

Tae-Wan Kim, Ph.D.
Department of Pathology
630 West 168th Street, P&S14-511
New York, NY 10032

The Columbia University is an Equal Opportunity, Affirmative Action Employer and strongly encourages applications from female and minority candidates.

POSITIONS OPEN

The National Science Foundation is seeking qualified candidates for a temporary position of **PROGRAM DIRECTOR** for Theoretical Physics within the Division of Physics. The incumbent will provide management and direction to the proposal-driven, Theoretical Nuclear Physics Program and Mathematical Physics Program. These programs support a large number of single Investigators and small groups at universities. The Division of Physics also encourages strong efforts aimed at outreach and the integration of research and education at the K–12 level.

Appointment to this position will be permanent or a one- to-two-year Visiting Scientist, temporary, or Intergovernmental Personnel Act (IPA) basis. The salary range, which includes a locality pay adjustment, is $74,697 to $116,414 per annum depending on qualifications and experience. A selectee assigned under the IPA provisions retains current salary and applicable benefits through the home institution. IPA applicants must be career employees of eligible organizations for at least 90 days prior to entering an assignment. *Certain citizenship requirements may have to be met.* Applicants must have a Ph.D. or equivalent professional experience in theoretical nuclear physics and six or more years of successful research experience in this field including strong evidence of scholarship.

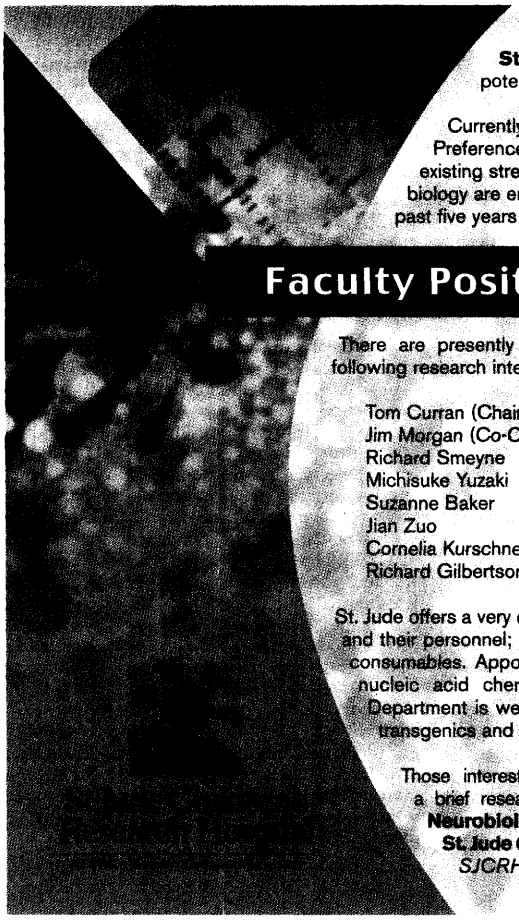
Individuals interested in applying should submit a résumé or any application of your choice to: **National Science Foundation, Division of Human Resource Management, 4201 Wilson Boulevard, Arlington, VA 22230**, Attention: announcement (Permanent), or announcement (Visiting Scientist, Temporary, or IPA) reference. Telephone inquiries may be referred to **Myra Loyd; Telephone: 703-292-4363**. For technical details, you may contact **Dr. Joseph L. Dehmer, Director, Division of Physics; Telephone: 703-292-7370** or **Dr. John W. Lightboy, Executive Officer, Division of Physics; Telephone: 703-292-7378**. Hearing-impaired individuals may call **TDD: 703-292-8044**. Announcements may be accessed electronically at **website: http://www.nsf.gov/oirm/**. The National Science Foundation provides reasonable accommodations to applicants with disabilities on a case-by-case basis. If you need a reasonable accommodation for any part of the application and hiring process, please notify the point of contact listed on this vacancy announcement. Permanent Position E20010XXX; Temporary Position E20010XXX. *NSF is an Equal Opportunity Employer committed to employing a qualified staff that reflects the diversity of our nation. We are particularly interested in attracting qualified women and underrepresented minority candidates to these positions. Formal consideration of applications will commence immediately and will continue until successful candidates have been identified.*

PH.D. SCIENTIST
MICROBIOLOGY

NewBiotics,Inc.(**website:http://www.newbiotics.com**) is currently seeking a Scientist/Senior Scientist in infectious diseases. The successful candidate should hold a Ph.D. in microbiology/biochemistry/molecular biology, have strong background in microbiology, and a minimum of one year of postdoctoral experience. Working knowledge of microbial metabolic pathways and infectious diseases, particularly mechanisms of action and resistance of antimicrobial agents, is required. Industrial experience in antibiotic discovery and preclinical development is a plus. Responsibilities include establishing and running microbiological and biochemical assays and, as part of a multidisciplinary team, generating the necessary information for lead identification and optimization. This is a key position in our efforts to develop and expand our ECTA platform technology.

To apply, please send a cover letter along with a detailed résumé and names and addresses of three references to:

Human Resources
NewBiotics, Inc.
11760–E Sorrento Valley Road
San Diego, CA 92121
E-mail: hr@newbiotics.com



St. Jude Children's Research Hospital is a premier center for the research and treatment of potentially fatal childhood diseases.

Currently, we seek an **Assistant Member in our Department of Developmental Neurobiology**. Preference will be given to applicants with research programs that complement the Department's existing strength in mammalian neurodevelopment. In particular, investigators studying neuronal stem cell biology are encouraged to apply. It is anticipated that successful applicants will have graduated within the past five years and have already achieved recognition through high profile publications.

Faculty Position in Developmental Neurobiology

There are presently eight faculty members in Developmental Neurobiology with the following research interests:

Tom Curran (Chairman)	• Molecular basis of neurodevelopment
Jim Morgan (Co-Chairman)	• Neuronal death and regeneration
Richard Smeyne	• Molecular models of neurodegenerative disease
Michisuke Yuzaki	• Glutamate signaling in cerebellar plasticity
Suzanne Baker	• Aberrant signal transduction in tumorigenesis
Jian Zuo	• Genetics of hearing and vision
Cornelia Kurschner	• PDZ proteins and neuronal function
Richard Gilbertson	• ErB receptor family signaling in brain tumors

St. Jude offers a very competitive package for incoming junior faculty including salaries for the investigator and their personnel; new laboratory space; as well as startup and continuing support for equipment and consumables. Appointees have access to a wide range of institutional core facilities for protein and nucleic acid chemistry, microarray facilities, gene knock-out and transgenic technologies. The Department is well equipped for most aspects of anatomy and histology, cell and molecular biology, transgenics and electrophysiology.

Those interested in joining this multidisciplinary department should arrange to have their CV, a brief research proposal and three letters of recommendation sent to: **The Developmental Neurobiology Search Committee, Attention: Ms. Carol Jacks/JOB CODE: F1228, St. Jude Children's Research Hospital, 332 N. Lauderdale St., Memphis, TN 38105-2794.**

SJCRH is an equal opportunity employment/affirmative action employer.

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the future
happens here first

Roche

Bioscience

At Roche Bioscience, we are committed to innovation in the discovery and early clinical development of human pharmaceuticals. Our scientists focus on the identification of novel medicines for the treatment of arthritis, osteoporosis, respiratory and lower urinary tract diseases, and central nervous system disorders. At our park-like campus, located in Palo Alto, California, you will find focused, dynamic, multidisciplinary teams equipped with the cutting-edge technologies necessary to achieve success.

MOLECULAR PHARMACOLOGY
Research Associate III/Research Scientist I

You will develop and implement screening assays to identify leads and possible drug candidates within the Respiratory Diseases group. You will identify, clone and express novel molecular targets, purify and characterize protein targets, as well as develop preliminary assays (binding and/or Ca2+ flux) and secondary assays (selectivity or functional). Your targets may include enzymes, GPCRs or nuclear hormone receptors. In addition, you will determine IC50s, maintain accurate records of experiments, prepare written reports and perform data entry. Requires a BS/MS in Molecular Biology or equivalent and 5-8 years experience. Strong skills with a variety of expression systems (mammalian, yeast, bacterial) and standard tissue culture procedures are required. Working knowledge of receptor binding and pharmacology, GPCR and signal transduction is essential for success.

We offer a competitive compensation program which rewards employees, including a generous vacation and holiday schedule, 401(k) and pension plans, a choice of medical plans, dental and vision coverage, flexible spending accounts, a range of life insurance options, and illness and disability plans. To apply, send your resume, indicating Job Code 2436-SCI, to paloalto.hr_staffing@roche.com or via mail to Roche Bioscience, 3401 Hillview Avenue, A2-HR, Palo Alto, CA 94304. As an equal opportunity employer, we are committed to workforce diversity.

Visit our website at
http://paloalto.roche.com.

WAYNE STATE UNIVERSITY

ASSISTANT/ASSOCIATE PROFESSOR OR PROFESSOR
Institute of Environmental Health Sciences

The Institute of Environmental Health Sciences (IEHS) at Wayne State University has tenure-track/tenured position(s) at the rank of Assistant/Associate Professor or Professor for individuals with programs having an environmental/disease focus in the study of orphan receptors, epigenetic regulation of transcription, reactive oxygen/nitrous oxide-mediated signaling, or endocytic regulation of surface receptor signaling. The IEHS offers highly competitive start-up packages and a research-intensive atmosphere. The IEHS is the home of the Environmental Health Sciences Center in Molecular and Cellular Toxicology with Human Applications (**website: http:// www.ehscenter.org**), which provides cell culture, imaging and cytometry, and high-throughput molecular genomics facility core support. Wayne State University serves as the genomics hub for the Michigan Life Sciences Corridor, which is a 20-year, $1 billion biotechnology research initiative that provides financial support to competitive research projects.

Please send curriculum vitae and the names of three references to:

Dr. John J. Reiners, Jr.
Chair, Faculty Search Committee
Institute of Environmental Health Sciences
2727 Second Avenue, Room 4000
Detroit, MI 48201

Wayne State University is a premier institution of higher education offering more than 850 academic programs through 14 schools and colleges to more than 31,000 students in metropolitan Detroit. *WSU is an Equal Opportunity/Affirmative Action Employer.*

ESTUARINE AND MARINE CONSERVATION ECOLOGIST
New Hampshire: Great Bay Area

The Nature Conservancy seeks individual responsible for conservation planning, strategy implementation and applied research, and scientific institutional coordination for The Nature Conservancy's Great Bay Estuary Project. Ecologist to identify/assess conservation targets, threats, and threat abatement strategies for species and habitats in Bay's estuarine and marine systems; implement conservation strategies; and develop/maintain active partnerships with government agencies and local communities in protecting/managing resources. Position to promote and/or direct applied research and monitoring to advance understanding of condition of Bay. Requirements: graduate degree in marine biology/ecology/resources management or related discipline; more than five years of experience; strong understanding of estuarine/marine systems, particularly in Northeast. Working knowledge of trends in estuarine and marine resources conservation and interest in applied research combined with ability to integrate research data. Basic competence with GIS. Committed to TNC mission. Send resumé/cover letter/salary requirements to: **The Nature Conservancy, Attention: Audra Lull, 22 Bridge Street, Fourth Floor, Concord, NH 03301**. *Equal Opportunity Employer.*

POSTDOCTORAL POSITION available to study (1) the role of megalin, a member of the LDL receptor family, in craniofacial development; (2) signaling processes involved with megalin-mediated endocytosis; (3) intracellular trafficking of megalin, its ligands, and its coreceptor cubilin. Please send curriculum vitae and three letters of reference to: **Dr. Scott Argraves, Department of Cell Biology, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425. E-mail: argraves@musc.edu** *Equal Opportunity Employer.*

POSITIONS OPEN

FISHERIES BIOLOGIST/ESTUARINE ECOLOGIST
Northwest Fisheries Science Center

The Northwest Fisheries Science Center of the National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration, seeks a Fisheries Biologist/Estuarine Ecologist to serve on a multidisciplinary team of Scientists studying estuarine and ocean ecology of anadromous and marine fishes in the Pacific Northwest. The identification of critical estuarine processes affecting the health and survival of important anadromous and marine species and the quality of their habitat in the Columbia River estuary is the primary focus of this position. The incumbent will initiate and participate in research studies delineating the important trophic interactions that affect fishery resources and the linkages between estuarine and ocean processes. The position requires the ability to utilize and adapt biological, ecological, and oceanographic techniques to identify relevant predator interaction and prey resources that affect anadromous and marine fishes, focusing on salmon; identifying the impact of abiotic factors to modulate the estuarine environment to provide suitable fish habitats that affect survival and fish population dynamics; and evaluate and model the role of the Columbia River estuarine environment to juvenile and adult salmonids. The individual also will assist with development of analytical methods for solving problems to ensure accuracy of and confidence in results, determine appropriate analyses and analyze research data, organize and write research reports and manuscripts for journals, and establish and maintain contact with researchers in and outside of the NMFS. The successful candidate must have a degree that included 30 semester hours in the biological and aquatic sciences and 15 semester hours in the physical and mathematical sciences. Applicants must provide proof of education (copy of college transcripts or list of college courses and credits earned). In addition, applicants must have one year of appropriate experience or Ph.D. in fisheries biology, zoology, or ecology; see **website: http://www.usajobs.opm.gov/a9NOAA.htm** for complete application information. Applications should be sent to: **NOAA/NMFS/NWSC, WASC/HRD/W2, 7600 Sand Point Way N.E., Attention: W/NMF/NWC/010388.RJ, Seattle, WA 98115-6349** and postmarked no later than September 7, 2001. For further information, contact **Cheryl Morisaki; e-mail: Cheryl.Morisaki@noaa.gov**. *The Northwest Fisheries Science Center is an Equal Employment Opportunity Employer.*

POSTDOCTORAL and RESEARCH ASSISTANT PROFESSOR POSITIONS. NIH-funded studies to determine the role of heparan sulfate proteoglycans in regulating tumor cell growth and metastasis. Opportunities for basic and translational research in breast cancer and multiple myeloma within a rich environment for training and collaboration at the Arkansas Cancer Research Center. Candidates should have experience in cell and molecular biology. Please include a letter describing your research interests, curriculum vitae, and the names and addresses of three references to: **Dr. Ralph D. Sanderson, Department of Pathology, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, AR 72205. E-mail: sandersonralphd@uams.edu**. *UAMS is an Equal Opportunity Employer.*

POSTDOCTORAL FELLOW, Cleveland State University. An NIH-funded Postdoctoral Fellow position is immediately available to develop nucleic acid-based technologies for early detection of cancer and cancer research. Highly motivated candidates with Ph.D. or M.D./Ph.D. in life science or related fields are encouraged to apply. Experience in DNA-based technologies, molecular biology, cancer genetics, and cell culture preferred. Send curriculum vitae and three letters of reference to: **Baochuan Guo, Ph.D., Department of Chemistry, Cleveland State University, 2351 Euclid Avenue, Room SR 357, Cleveland, OH 44115 U.S.A.** *Cleveland State University is an Equal Opportunity Employer/Affirmative Action and committed to nondiscrimination. Minority/Female/Disabled/Veteran encouraged.*

POSITIONS OPEN

Agricultural Research Service — United States Department of Agriculture

VETERINARY PATHOLOGIST

U.S. Department of Agriculture, Agricultural Research Service, Foot-and-Mouth Disease Unit (FMDU) at the Plum Island Animal Disease Center (PIADC), is seeking a Veterinary Pathologist to join a group of five Investigators as a Senior Support Scientist (GS–13/14). FMDU Senior Scientists are actively involved in research investigating pathogenesis, molecular genetics, cell biology, immunology, vaccine development, and molecular epidemiology of FMDV and vesicular stomatitis virus (VSV) infection in livestock species including swine and bovine. The incumbent will support ongoing research efforts requiring expertise in macroscopic pathology, molecular pathology, and histopathology techniques including immunohistochemistry, *in situ* RT-PCR, hybidization with molecular probes, confocal microscopy, and electron microscopy. The position will require supervision of a support technician and collaboration with FMDU Scientists and animal care personnel. D.V.M., M.D., Ph.D. or combination with formal training in systemic and/or anatomical pathology is desirable. Experience with large animal research and Board certification are desirable. Salary is commensurate with experience at a salary range of $65,155 to $100,095 plus benefits, *U.S. citizenship is required.* The position requires daily travel from Orient Point, New York, or Old Saybrook, Connecticut, to Plum Island, New York, by government-provided ferry. For further information on scientific issues, contact **Dr. Peter Mason; Telephone: 631-323-3177; e-mail: pwmason@piadc.ars.usda.gov**. For application procedures, contact Maria Martocchia; **Telephone: 631-323-3346**.

USDA/ARS is an Equal Opportunity Employer.

TENURED/TENURE-TRACK INVESTIGATOR
Laboratory of Clinical Investigation
National Institute of Allergy and Infectious Diseases

The Laboratory of Clinical Investigation (LCI) has an opportunity for a tenured or tenure-track Investigator to conduct studies that complement the existing research interests of the laboratory, specifically the immunology of autoimmune/inflammatory conditions and/or the pathogenesis of chronic infections. For more information about LCI and NIAID Intramural programs, see **website: http://www.niaid.nih.gov/dir**. An ideal candidate will have well-developed clinical interests and will initiate patient-oriented research studies leading to the improved understanding and/or novel therapies of diseases in the field of interest. *Candidates must be U.S. trainees* or ECFMG/USMLE-certified physicians with specialty training. Salary will be dependent upon qualifications. Other incentives may be available. Curriculum vitae; bibliography; three letters of reference; a detailed statement of research interests; and selected publications must be submitted by July 1, 2001, to: **Ms. Joann Martin, Office of Human Resources Management, NIAID, Building 31, Room 7A27, 31 Center Drive, MSC 2520, Bethesda, MD 20892-2520**. All information provided by the applicants will remain confidential and will be viewed only by authorized officials of the NIAID.

NIH is an Equal Opportunity Employer.

ENGINEERING

Join our team developing leading-edge life science technologies. We have openings for multiple levels of Software Engineers, Mechanical Engineers, Senior Research Associates, Research Associates, Scientists, Scientific Directors, Electrical Engineers, Director of Microarray, and more. Résumés to: **Molecular Dynamics-APBiotech, Professional Staffing, 928 East Arques Avenue, Sunnyvale, CA 94085-4520. FAX: 408-773-8343; e-mail: jobs.mdyn@am.apbiotech.com**. *Equal Opportunity Employer.*

NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES NATIONAL INSTITUTES OF HEALTH

SENIOR SCIENTIFIC LEADERSHIP POSITIONS

The Division of Allergy, Immunology and Transplantation at the National Institute of Allergy and Infectious Diseases (NIAID) is seeking senior scientists to lead and direct expanding national and international programs in basic, pre-clinical and clinical research on immune-mediated diseases, including: asthma and allergic diseases; autoimmune disorders; primary immunodeficiency diseases; and transplantation immunobiology and clinical research. Dynamic and creative individuals with Ph.D. and/or M.D. degrees, experience in basic and clinical research, and strong written and oral communication skills will participate in the oversight, design and development of established and new research programs.

NIAID is currently recruiting for the following senior scientific positions.

TRANSPLANTATION

Chief, Transplantation Immunobiology Branch

Chief, Clinical Transplantation Section, Transplantation Immunobiology Branch

AUTOIMMUNE AND PRIMARY IMMUNODEFICIENCY DISEASES

Chief, Clinical Immunology Branch

Chief, Immunodeficiency and Immunopathology Section, Clinical Immunology Branch

Medical Officer, Autoimmune Diseases Clinical Trials Program

ASTHMA AND ALLERGIC DISEASES

Chief, Asthma, Allergy and Inflammation Branch

OFFICE OF CLINICAL APPLICATIONS

Medical Officer, Immune Tolerance Clinical Research Program
Health Scientist Administrator/Medical Officer, Regulatory and Industry Affairs

Annual compensation may range between $74,697 and approximately $144,000, commensurate with experience, education and the level of responsibility of the position. Other incentives may apply.

Interested persons may contact Dr. Daniel Rotrosen, Director, Division of Allergy, Immunology and Transplantation, NIAID, at drotrosen@niaid.nih.gov for additional information about these positions. A curriculum vitae including bibliography should be submitted to **Ms. Sheila Conner, Office of Human Resources Management, NIAID, 6700B Rockledge Drive, Room 1213, Bethesda, MD 20892-7603.** Applicants should also identify the position(s) for which they wish to be considered.

NIH is an Equal Opportunity Employer

APPLIED MOLECULAR EVOLUTION

DISCOVER THE POWER OF PROTEIN ENGINEERING™

Applied Molecular Evolution, Inc. (AME) is a leader in the application of directed evolution for the improvement of the clinical properties of human therapeutic proteins. Our proprietary AMEsystem™ technology has been applied both to currently marketed, FDA-approved biopharmaceuticals and to the development of novel therapeutics. The technology permits the discovery of molecules with increased efficacy and decreased side-effects, while keeping potentially immunogenic changes to a minimum.

AME provides a high level of responsibility in a dynamic working environment with the opportunity to develop and implement leading-edge protein engineering technologies.

AME seeks highly motivated & innovative scientists to provide technical leadership in the following areas:

Assay Development (job code 7024)

Responsible for providing assay development, screening and molecular biology support.

Requires a B.S./M.S. degree. Experience with PCR, DNA isolation, cloning, analysis and mutagenesis. General biochemical and molecular biology skills, including protein expression, purification and characterization.

Mammalian Cell Culture (job code 7025)

Responsible for providing mammalian cell culture support.

Requires a B.S./M.S. degree. Experience with mammalian cell cultures including maintenance of cultures, development of stable cell lines, transfections and protein expression.

***in vivo* Pharmacology (job code 7023)**

Develop, characterize and implement animal models for the evaluation of novel protein therapeutics.

B.S./M.S. in biology, immunology or related science. Requires prior experience in the development of small animal models of human disease, ability to perform immunology and biochemistry based assays and the ability to support multiple projects.

Send or e-mail cover letter and resume to:
Applied Molecular Evolution, Inc., Job Code _____
3520 Dunhill Street, San Diego, CA 92121
careers@AMEvolution.com

www.AMEvolution.com

ARRAY
BIOPHARMA

Array BioPharma is a publicly held drug discovery company creating new drug candidates through innovations in chemistry and structural biology. Array's world-class scientific team provides drug discovery expertise to collaborators and develops its own proprietary drug candidates. Array is located in state-of-the-art facilities in Boulder and Longmont, Colorado. To learn more about our organization, please go to **www.arraybiopharma.com** or stop by Array's booth (#221) at the Drug Discovery Technology Conference.

BIOANALYTICAL SCIENTISTS WITH A DRUG METABOLISM FOCUS

We are seeking an Associate Scientist or Research Associate at the M.S. or B.S. level with 5-10 years of industry experience in drug metabolism. This person develops and utilizes bioanalytical mass spectrometry and separation techniques (liquid chromatography) to provide Medicinal Chemistry and high throughput support for in vitro metabolic profiling and *in vivo* pharmacokinetic analysis. Experience in tandem mass spectrometry and interpretation of small molecule structural data is required. This is a "hands-on" position with demonstrated knowledge of LC/MS techniques and modern chromatography/spectroscopy data software used in the pharmaceutical industry.

SCIENTISTS WITH HTS/ASSAY DEVELOPMENT EXPERTISE

We are seeking a highly motivated individual with 5+ years of relevant experience in a pharmaceutical drug discovery environment. Extensive experience in developing assays applicable to the areas of in vitro drug metabolism, cytotoxicity and enzymology is highly desirable. Experience in the use of automated screening systems and biological database software packages desired. Strong interpersonal skills, initiative and scientific excellence are critical.

We offer an excellent compensation package and the opportunity to be part of a growing team of experienced scientists who want to revolutionize drug discovery.

Array is an equal opportunity employer. For consideration, please apply to: Array BioPharma, Attn: Human Resources, 3200 Walnut Street, Boulder, CO 80301 or hr@arraybiopharma.com or by FAX at 303-381-6638.

ASSISTANT PROFESSOR
- Plant Biology -

Cold Spring Harbor Laboratory is accepting applications for a faculty position in Plant Genetics, preferably at the Assistant Professor level. We seek outstanding candidates who use model 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. Existing research at CSHL is listed on our **Web site: www.cshl.org.**

Cold Spring Harbor Laboratory has 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. Cold Spring Harbor Laboratory is part of a global consortium of researchers involved in the comprehensive sequencing of the Arabidopsis and rice genomes. The Laboratory has recently opened a new technology center, which contains a state-of-the-art microarray facility, the genome sequencing center and the maize targeted mutagenesis database (http://mtm.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

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

Department of Biology
Northeastern University
Boston, Massachusetts

The Department of Biology offers 4 graduate degree programs: the Ph.D. in Biology, M.S. in Biology, M.S. in Bioinformatics, and M.A. in Teaching. The Department consists of 22 full-time faculty, approximately 20 professional research associates and postdoctoral fellows, and 100 graduate students. The research specialties of the faculty include: **Biochemistry, Cell and Molecular Biology, Physiology, Neurobiology, Microbiology, Marine Biology, Ecology, and Vertebrate Zoology**. Greater than 80% of the faculty have significant external research funding. Graduate students interact closely with faculty in developing the intellectual and experimental skills required for their research. Students are encouraged to carry out laboratory rotations in their first year before selecting their thesis advisor.

Northeastern University is located in the Back Bay area of Boston with easy access to a tremendous variety of academic, cultural, and recreational opportunities. Graduate students in our department can conduct studies at a number of associated facilities, including the University's Marine Science Center, Institute for Molecular Biotechnology, and Center for Subsurface Sensing and Imaging Systems.

Graduate assistantships in the department provide full remission of tuition and annual stipends of $17,800. Graduate funding is in the form of teaching assistantships, research assistantships, and internships with local biotechnology companies.

Applications for Fall 2002 must be received by January 15, 2002 in order to receive full consideration for financial aid. The general Graduate Record Examinations (GRE) are required and applicants whose first language is not English must have a minimum TOEFL score of 600. To receive an application contact: **Graduate Staff Assistant, Department of Biology, 414 Mugar Life Sciences, Northeastern University, Boston, MA 02115; Phone: (617) 373-2262; Fax: (617) 373-3724; E-mail: f.lewis@neu.edu.**

For more information, see our web site at: www.biology.neu.edu/graduateprogram

CHAIR, DEPARTMENT OF BIOCHEMISTRY
UNIVERSITY OF TORONTO
TORONTO, ONTARIO, CANADA

Applications are invited for the position of Chair, Department of Biochemistry, Faculty of Medicine, University of Toronto, Toronto, Ontario. The Faculty's Department of Biochemistry is nationally pre-eminent and internationally competitive. For detailed information on the Department, visit its website at http://bioinfo.med.utoronto.ca/biochem.html.

The Faculty's goal for this Department is to achieve the highest standards in research and in the teaching of undergraduate and graduate students. The Chair should work with other departments and institutions to design and develop innovative models of research to maintain the Department's internationally competitive research programs. The next Chair of the Department of Biochemistry must have the vision and ability to take the Department to a new level of international recognition and achievement. The successful candidate will be a recognized scholar with the breadth to catalyze research in all areas of Biochemistry, and will be an effective teacher who is deeply committed to excellence in education. The successful applicant must also have the leadership qualities and administrative skills necessary to direct a large and geographically dispersed department, while fostering an environment of cooperation and collaboration locally, nationally, and internationally. Applicants should be eligible for academic appointment to the rank of Full Professor.

Please reply (electronic submission preferred) by October 1, 2001, with a current curriculum vitae, to: **Dean David Naylor, c/o Leslie Bush, Executive Assistant, Faculty of Medicine, University of Toronto, Room 2109, Medical Sciences Building, 1 King's College Circle, Toronto, Ontario, Canada M5S1A8; Fax: 416-978-1774 / E-mail: leslie.bush@utoronto.ca**

In accordance with its employment equity policy, the University of Toronto encourages applications from qualified women and men, members of visible minorities, aboriginal persons and persons with disabilities.

Oncologist, Cancer Genetics Interest
Cancer Genetics Branch
Center for Cancer Research
National Cancer Institute

The Genetics Branch, Center for Cancer Research (CCR), National Cancer Institute, is seeking a board eligible/certified oncologist with a predominant interest in cancer genetics, risk assessment, biomarkers, surveillance, and cancer chemoprevention to facilitate, direct, and plan clinical trials. The position will be a joint appointment in both the Genetics Branch and the Medical Oncology Clinical Research Unit of the CCR. The position can be either a clinical investigator tenure track or staff physician appointment depending on the qualifications and interest of the candidate. The successful candidate will become the contact point and liaison for clinical cancer genetics trials developed within the Center for Cancer Research as well as other intramural components of the National Cancer Institute. In addition it is expected that this individual will participate in on-going collaborations and foster others between the NCI and other intramural clinical genetics groups including those based within the National Center for Human Genome Research. An involvement in currently open protocols in the areas of breast and colorectal cancer risk assessment and chemoprevention would provide a starting point for program development.

For additional information about this position contact **Ilan Kirsch, M.D. at kirschi@exchange.nih.gov.** For qualifications required, evaluation criteria, and application instructions, view the website at **http://dbs.nci.nih.gov/employment**

For information on application procedures, call **Renee Gamborg, 301-435-5383.** Applications must be received by September 30, 2001. Mail to: **Renee Gamborg, Naval Medical Hospital, Bldg 8 room 5101, 8901 Wisconsin Ave., Bethesda, MD. 20889.** *The National Cancer Institute is an Equal Employment Opportunity and Affirmative Action employer that values and fosters diversity throughout the entire organization.*

NATIONAL INSTITUTES OF HEALTH
NATIONAL EYE INSTITUTE

Job Opportunities

The National Eye Institute Intramural Program at the NIH campus, Bethesda, MD., is seeking highly qualified Postdoctoral Fellows, Research Associates and Staff Scientists in the following areas:

- **Molecular Biology**
- **Cell Biology**
- **Immunology**
- **Psychophysics**
- **Biochemistry**
- **Epidemiology**
- **Biostatistics**

Salaries range from $29,000 to $118,400 per annum, based on experience and type of appointment.

NEI offers an extensive benefits package that you may be eligible for, depending on the appointment mechanisms: Health Benefits, Life Insurance, Retirement Benefits, Annual and Sick Leave, Formal Training Program, Recruitment Bonus, Retention Allowance, Relocation Allowance, Loan Repayment Program, and Travel Benefits.

Candidates interested in specific job opportunities at the NEI may visit the NEI web site at **http://www.nei.nih.gov/** listing the most current positions available.

NIH/NEI is an Equal Opportunity Employer

A Place With Vision.

Alcon is a $2.5 billion global leader in the Ophthalmic, Vision Care and Otic industries with the most complete line of consumer, pharmaceutical and medical device products. Our people form a unique community of multinational, multidisciplinary, highly successful men and women who have provided Alcon with 53 years of continuous growth. As an important contributing subsidiary of the giant multinational Nestlé, we enjoy an exceedingly high corporate stability enhanced by a very low rate of employee turnover. Superb facilities, terrific benefits and a high quality of life in a growing city with a very low cost of living/housing, contribute to Alcon being selected for the third consecutive year as one of the "100 Best Companies to Work for" by *Fortune* magazine.

Senior Scientist - General/Safety Pharmacology

This is an exciting opportunity to participate at a number of very crucial stages in the process of submitting drug candidates for regulatory approval to treat diseases and disorders of the eye.

Responsibilities:

- Interfaces with drug discovery project teams to help profile compounds *in vivo* for identifying key leads to advance compounds into the development pipeline
- Oversees general safety pharmacology profiling, including the provision of expert opinion on what tests are required for each class of compound
- Identifies contract service labs, finalizes drug safety protocols, oversees conduct of studies, interprets data and writes technical reports on all compounds profiled
- Acts as a liaison with Regulatory Affairs and attends all meetings (internally and externally) that pertain to pharmacology regulatory filings
- Writes all regulatory filing submissions for Pharmacology and participates on drug development teams to help gain approval of products in different countries

Qualifications:

- Ph.D. in Pharmacology, Toxicology, Physiology, Molecular Biology or Molecular Pharmacology
- At least five (5) years of industrial experience within a multinational ethical pharmaceutical company
- Experiential understanding of different pharmacology paradigms for profiling compounds *in vivo*
- Expertise in regulatory filing submissions (inside or outside the eye care arena) and a broad knowledge of general/safety pharmacology evaluation
- Excellent oral and written communication skills
- Ability to participate comfortably and effectively in a team-oriented approach to drug discovery and development

Please forward your resume and salary requirements to: helena.loflin@alconlabs.com

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UNIVERSITY OF MARYLAND
Baltimore

VICE PRESIDENT FOR RESEARCH AND DEVELOPMENT

University of Maryland, Baltimore

The Baltimore City campus of the University of Maryland (UMB) is seeking an entrepreneurial individual to serve as its Vice President for Research and Development, a newly created position that reports directly to the President. UMB, the founding campus of the University System of Maryland, includes the six professional schools of dentistry, law, medicine, nursing, pharmacy and social work and an interdisciplinary graduate school. With an annual budget in excess of $515 million, approximately half of which is generated by externally sponsored research activity, a faculty and staff complement of 5,200, and a student body of about 5,300 FTE, the campus seeks an individual who can provide leadership and focus for the continued growth and development of its research and technology transfer program.

The federal government sponsors approximately 60% of UMB's research program, with the National Institutes of Health as the largest single funder. The pharmaceutical industry and other private sector entities currently account for about 25%. UMB's technology transfer activity is also growing rapidly, with 60 inventions disclosed, 20 patents and 6 licenses issued in FY 2000. The campus has also spawned 8 start-up companies to date. A Clinical Trials Center, located in the UM School of Medicine and serving all of the schools, provides full resources to support Phase I through Phase IV trials.

Major Duties and Responsibilities:

The VP for Research and Development (VPRD)

- Oversees the offices of sponsored programs and technology transfer.
- Coordinates research development and commercialization activities within the UMB professional schools, with sister institutions within the University System of Maryland, and with the State of Maryland.
- Solicits and manages external investment in the university's intellectual property, and manages all aspects of patenting and licensure of this property.

Qualifications:

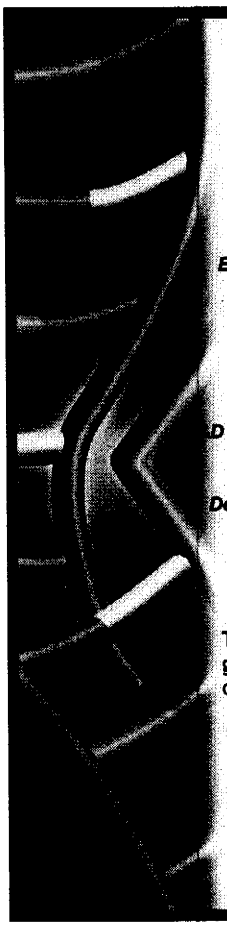
The successful candidate is an entrepreneur with outstanding management skills, a strong background in biomedical science (particularly genomics and molecular biology), and a proven track record of accomplishments in the commercialization of biomedical research and in raising and managing venture capital in support of this research. The candidate must possess the ability to work effectively in a coordinating role across multiple constituencies; a strong, open and collaborative leadership style; a customer-service orientation with a focus on excellence; outstanding communications skills; and at least five years' experience in biomedical research development at a senior level. While individuals who have gained this experience solely in the private and/or government sectors will be considered, preference will be given for experience in a research university or academic medical center.

Review of applications will begin immediately and continue until the position is filled. To ensure full consideration, applications should be received by August 31, 2001. A letter of application, together with a resume and the names, addresses and telephone numbers of at least three references, should be sent to:

Search Committee,
Vice President for Research and Development,
c/o Office of the President,
University of Maryland,
520 W. Baltimore Street, Baltimore, MD 21201
(vprdsearch@umaryland.edu).

AA/EOE/ADA

www.hr.umaryland.edu



THIRD WAVE
TECHNOLOGIES

Opportunities available for:

Clinical Research Associate
Engineers (Electrical, Mechanical, Quality, Validation, Software Validation)
Genotyping Lab Manager
Instrumentation Support Engineer
IT
Marketing Manager
Mass Spec Scientist
D Bilingual Senior Scientist - Japanese/English
R&D Manager of Clinical Genotyping
R&D Scientist/Senior Scientists - Assay Development, Gene Expression, Genotyping
Robotics Programmer
Sales - Director, Regional Mgr.
Senior Purification Scientist
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Submit resume to:
employment@twt.com

Please visit our website for further information at
www.twt.com.

Equal Opportunity Employer

SANGSTAT

SangStat, located in Fremont, California, is a global biotechnology company building on its foundation in transplantation to discover, develop and market high value therapeutic products in the transplantation, immunology and hematology/oncology areas. We currently seek dynamic, motivated individuals to fill the following positions:

RESEARCH ASSOCIATE
(RD-007)

SENIOR RESEARCH ASSOCIATE
(RD-005)

DIRECTOR, DISCOVERY RESEARCH
(RD-001)

DIRECTOR, NORTH AMERICAN MARKETING
(MK-008)

PRODUCT MANAGER
(MK-002)

SALES TRAINING MANAGER
(SA-011)

QUALITY ASSURANCE MANAGER
(QA-009)

TRANSPLANT ACCOUNT MANAGER/SALES
(SA-004)

For more information on these positions, please visit:
www.sangstat.com
Resumes should be sent to **hr@sangstat.com**
or fax (510) 789-4460.

Clemson University

The Bioengineering Department at Clemson University is continuing its expansion in its research activities at the intersection of surface chemistry, physiology and solid-state electronics. This department has been at the forefront of bioengineering innovation for over 20 years and is seeking to train the next generation of bioengineers in the areas of cell-based biosensors, biological interface design and biocomputation. We are now reviewing resumes from individuals who have the qualifications listed below.

Research Faculty Position (Open Rank)
A Ph.D. with five to ten years experience in neuroscience with a background in single and dual patch-clamp electrophysiology. This person will be actively involved in the set-up and operation of a state-of-the-art electrophysiology lab investigating neuronal and cardiac electrophysiologic function using single and dual patch-clamp electophysiology, calcium imaging and solid state microelectrode systems. The projects will focus on understanding neuronal development and communication and its application to new sensor concepts and biocomputational investigations.

Electrophysiologist Postdoctoral Associate
Neuroscience background and patch-clamp eletrophysiology experience is essential. This person will be working on the electrophysiology of cell-cell communication on in-vitro circuit patterns.

Cell Biologist Postdoctoral Associate
Degree in cell biology, neuroscience, or related field with an emphasis in cellular characterization and embryonic development of neuronal systems.

Surface Chemist Postdoctoral Associate
Degree in chemistry, bioengineering, chemical engineering, or other applicable discipline with knowledge and experience in surface modification primarily with self-assembled monolayers is needed. Research work will include working with basic protein and cellular in-vitro interactions with SAMS.

Cell Culture Technician
Proficiency in neuronal culture techniques with two to five years experience and a BS or MS degree is required for this position. Culture of primary neuronal cell experience is necessary.

This is an opportunity to join a dynamic young department at the cutting edge of bioengineering and to work with the Hunter Chair of Bioengineering (see http://www.ces.clemson.edu/bio/people/faculty/hickman/hickman.html). New state-of-the-art facilities for surface modification, analysis, electrophysiological and immunocytochemical characterization have been created in the Department. People experienced in multidisciplinary aspects or desiring to learn and participate in multidisciplinary venues are encouraged to apply. Clemson is the land grant university of South Carolina and is located in the beautiful Piedmont section of South Carolina in the midst of lakes and mountains. The region is nationally recognized for its quality of life, outdoor recreation, and low cost of housing and living. Clemson is near several major metropolitan areas and 40 minutes from an international airport. The positions are available immediately and include an attractive compensation package. Inquiries should include the area of interest, vitae, publication list and four references, and be sent to: **Michele Yacopucci, Department of Bioengineering, Clemson University, 501 Rhodes Research Center, Clemson, SC 29634-0905. E-mail: myacopu@clemson.edu.** The review process will begin on August 15, 2001, and will continue until the positions are filled.

Clemson University is an Equal Opportunity/ Affirmative Action Employer and encourages applications from underrepresented groups, including minorities and women.

PENNSTATE

Vice President for **RESEARCH**

Director
Life Sciences Consortium

The Pennsylvania State University, a major public research university with research activity exceeding $490 million annually, invites applications and nominations for the position of Director of the Life Sciences Consortium (LSC). The Director reports directly to the Vice President for Research and holds a tenured academic position at the rank of Professor.

The LSC is comprised of more than 300 faculty in the life sciences who conduct research in seven of Penn State's colleges, six at the University Park Campus and one at the Hershey Medical Center Campus. The LSC supports the integration of research and teaching across disciplines in the life sciences at Penn State, and it is dedicated to enhancing Penn State's ability to prepare students for tomorrow, strengthening research in the life sciences, encouraging research alliances across disciplinary boundaries, and developing new approaches to the application of basic science in business. Consortium resources support research through state-of-the-art shared technology facilities, competitive funding of collaborative projects, and an innovative graduate program. As part of the life sciences initiative, the University has committed funds to recruit faculty into key disciplines of the Consortium, and construction has begun on a new 150,000 sq. ft. life sciences building in a university-wide effort to increase the visibility and stature of life sciences research and education.

President Spanier and the Board of Trustees established the LSC as a selective investment by the University in interdisciplinary research that promises to have a significant impact on society. Additional areas of compelling societal interest in which special investments also have been made include the consortia in Materials Research, Environmental Studies, and Children, Youth and Families as well as the Social Sciences Research Institute and a new School of Information Sciences and Technology. The LSC Director will be expected to facilitate interdisciplinary research within the LSC and to initiate multidisciplinary programs with other consortia.

The successful candidate will be recognized as an international leader in the life sciences with an exemplary record of scientific accomplishments and vision. He or she will possess strong team-building skills to bring together faculty with complementary expertise and interests. The individual will have an understanding of the national funding scene, and a proven track record in securing multi-investigator grants. The Director will also have an abiding sense of, and commitment to, academic excellence and this institution's land grant mission. The Director will be provided the flexibility to maintain his or her own research program.

Review of applications will begin on September 10, 2001, and will continue until the position is filled. Nominations may be sent via e-mail to jep5@psu.edu. Applicants should send a statement expressing their interest in this position, a summary of their vision for the life sciences in the new millennium, a curriculum vitae with home page URL, if available, and the names, addresses, telephone numbers, and e-mail addresses of four references on a computer diskette or as an e-mail attachment to:

Dr. Richard Frisque, Chair
Search Committee for Life Sciences Consortium Director
The Pennsylvania State University
304 Old Main, Box S
University Park, PA 16802
E-mail: jep5@psu.edu

Interested individuals are invited to visit the following web site for more information: www.lsc.psu.edu

Penn State is committed to affirmative action, equal opportunity, and the diversity of its workplace.

Bristol-Myers Squibb is a recognized leader in discovering and developing novel, cost-effective pharmaceutical therapies that improve health and quality of life. Many have "found the balance" with us: a challenging career with a leading global pharmaceutical company and a quality of life only Syracuse can offer. Join us!

Biotechnology Opportunities

Department Supervisor

Purification Operations: Lead process development projects, clinical supply production and commercial manufacturing in a state-of-the-art facility. Supervise plant personnel; interface with engineering, development scientist and other technical support; and ensure GMP compliance. BS in Chemical Engineering or Chemistry/Biochemistry and purification process experience required. Pharmaceutical manufacturing experience preferred. 5-7 years proven supervisory experience also preferred. **Job #01-0746**

Manager/Group Leader, Protein Purification Development

Protein Purification Development: Direct the activities of other scientists in the development of innovative purification processes for future Biologics. Maintain state-of-the-art knowledge in appropriate scientific disciplines through published literature and attendance at internal and external scientific meetings. Establish close collaboration and interface with development and analytical scientists and operations personnel. Ph.D. in Biochemistry and experience in biologics purification development required. Demonstrated leadership skills with proven staff development experience a plus. **Job #01-2179**

Bristol-Myers Squibb offers a challenging and collegial working environment, competitive salaries and an excellent compensation package. Please reply to **Manager, Human Resources, Job Code #____, Bristol-Myers Squibb Company, P.O. Box 4755, Syracuse, NY 13221-4755. Fax: (315) 432-2640. Email: syracuse.jobs@bms.com** Equal opportunity employer, M/F/D/V.

Bristol-Myers Squibb Company

UNIVERSITY OF KENTUCKY
COLLEGE OF MEDICINE

The University of Kentucky College of Medicine is seeking applications for Chair of Physiology. The department is one of five basic science departments within the University of Kentucky Chandler Medical Center in Lexington, KY and ranks in the top 20 in NIH funding among public universities. 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 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 now seeking a candidate who will build on the foundation of this exceptional 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 **Edythe Tevelson Lach, College of Medicine, Office for Research and Leadership Development, L007 Kentucky Clinic, Lexington, KY 40536-0284 or to etlach@email.uky.edu.** The committee will begin reviewing applications on September 14, 2001, and will continue accepting them until the position is filled.

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

IDEC Pharmaceuticals Corporation

IDEC Pharmaceuticals is a leader in the development of immunologically active monoclonal antibodies and other biologics for therapeutic application to cancer and autoimmune disorders. We pride ourselves in the excellence of our team members and invite you to join us in San Diego, California.

CELL BIOLOGIST

We are seeking a scientist with expertise in the area of cancer biology for a newly created department of Cell Biology. The research will support discovery and validation of novel therapeutic targets, including targets identified by genomics-based approaches, and contribute to signaling and mechanism studies. The successful candidate will have in-depth knowledge of the molecular biology of cancer, familiarity with tumor and metastasis models, and the ability to establish cell-based assays for migration, cell growth and cell cycle regulation. We are specifically inviting applicants with expertise in functional characterization of membrane proteins and receptors.

We are seeking an innovative PhD scientist with minimum 4 years postdoctoral experience and proven record of independent scientific achievements and publications. Industrial experience is preferred. IDEC offers a dynamic research environment and career growth opportunities.

If you have the appropriate scientific background and a desire to apply it to drug discovery, contact us at IDEC Pharmaceuticals Corporation, Attn: HR, Job Code 0029, Unit #220, PO Box 3175, Burlington, MA 01803. Email to hr_info@idecpharm.com. EOE. NASDAQ/IDPH.

Visit our website at
www.idecpharm.com

BIACORE

Biacore is (www.biacore.com) the global leader in developing, manufacturing and marketing of unique and innovative products to detect and monitor biomolecular binding. Biacore® systems are used world-wide in pharmaceutical, biotechnology, diagnostic, academic and government institutions. Biacore instruments monitor binding events in real-time and reveal more information about biological interactions than any other single analytical technique. Biacore technology has seen a growing acceptance within the scientific community. As a result, Biacore, Inc. is building its team in order to meet current and future customer needs. Currently we are looking for the following dedicated professionals:

APPLICATION SCIENTISTS,
Life Science and Drug Discovery (2)
APPLICATION SCIENTIST,
Cell Pharmacology (1)
ASSOCIATE SALES ACCOUNT SCIENTIST,
Academic (2)

For details and job code, log on to www.biacore.com

Send resume with job code, references and salary history to:

Biacore, Inc., Human Resources
200 Centennial Avenue, Suite 100
Piscataway, NJ 08854

Faculty Position
Cancer Research Institute and Comprehensive Cancer Center
University of California, San Francisco

The Cancer Research Institute and Comprehensive Cancer Center at the University of California, San Francisco are recruiting for a faculty position to collaborate with a new Interdisciplinary Molecular Target Assessment Team and with a Radioimmunoconjugate Program for diagnosis and therapy.

Candidates must have a PhD or MD/PhD degree or equivalent and have completed appropriate postdoctoral training. Candidates must have experience in preclinical development of carrier antibodies or ligands and/or in radiobiology using radionuclides. It is expected that the successful applicant would play a leading role in a newly formed program of Molecular Target Assessment (functional and/or molecular imaging) and in development of novel antibody-based therapeutics.

The appointment will be at the assistant, associate, or professor level in the in-residence series. Applications are currently being accepted and the position is open until filled. Send *curriculum vitae* to Joe Gray, PhD, UCSF Box 0808, San Francisco CA 94143-0808.

UCSF is an affirmative action/equal opportunity employer. The University undertakes affirmative action to ensure equal employment opportunity for underutilized minorities and women, for persons with disabilities, and for Vietnam-era and special-disabled veterans.

University of California
San Francisco
UCSF
Comprehensive
Cancer Center

http://cc.ucsf.edu

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If you are a scientist looking for a slightly different, more people-oriented career in the sciences, we would like to speak with you. We seek:

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- Product Manager, Custom Sequencing - San Francisco
- Applications Lab Manager - San Francisco
- Applications Lab Technician - San Francisco

Our sister company, **MJ BioWorks, Inc.**, is seeking:

- Assistant Research Scientist - San Francisco

If interested please contact: MJ Research, Inc.
590 Lincoln Street, Waltham, MA 02451
Fax: 617-972-8085 Email: hr@mjr.com

Please visit our web site at www.mjr.com for more information.

Visit us at the Science Job Fair in Boston on August 13th!

MJ Research is an Equal Opportunity Employer.

ASSISTANT/ASSOCIATE PROFESSOR

MOLECULAR GENETICS

The Musculoskeletal Disease Center of Loma Linda University and the Jerry L. Pettis Veterans Administration Medical Center is a large, multi-disciplinary laboratory on the cutting edge of medical research. Our scientists use the latest state-of-the-art equipment in the collaborative environment of our Molecular Genetics and Gene Therapy laboratories, alongside nationally and internationally known Principal Investigators. The Musculoskeletal Disease Center is composed of senior scientists, postdoctoral fellows, graduate students, and technicians, as well as a strong administrative staff. The atmosphere is one of collegiality and team effort.

Two Assistant/Associate Professor positions are available immediately in molecular genetics research. In the first position, the projects include linkage, mapping and identification of candidate genes for bone density, and mechanical loading in animal and human studies. In the second position, projects will include linkage, mapping, and identification of candidate genes for soft- and hard-tissue regeneration. Candidates must have a Ph.D. in molecular biology/genetics with experience in linkage or association studies, state-of-the-art molecular biology techniques to identify candidate genes and evaluate their functions, and statistics. A strong performance in terms of scientific publications in molecular genetics is preferred. The candidate will be able to interact with other investigators in the Musculoskeletal Disease Center, which focuses on soft- and hard-tissue regeneration, functional genomics, and gene therapy.

Our salaries and benefits are competitive. For consideration, please send cover letter, C.V., and names of three references to **David J. Baylink, M.D., Musculoskeletal Disease Center, P.O. Box 7210, Loma Linda, CA 92354 or e-mail to david.baylink@med.va.gov.**

The Musculoskeletal Disease Center is ideally located in the Inland Empire of Southern California, one hour away from metropolitan Los Angeles, Orange County, beaches, mountains, and the desert.

ornl | UT

The University of Tennessee–Oak Ridge National Laboratory

Graduate School of Genome Science and Technology

The new Genome Science and Technology (***GST***) Graduate School is designed to focus on developments in the biological and computational sciences that stem from genome sequencing efforts. The knowledge of complete genomes is revolutionizing the biological sciences, leading to new discoveries in the health sciences and biology. ***GST*** students will be trained in emerging areas of genomics, structural biology, proteomics, computational biology/bioinformatics, and bioanalytical technologies.

GST takes advantage of the faculty, facilities, and research programs at The University of Tennessee and the Oak Ridge National Laboratory. This novel program combines an academic environment with the team-oriented approach to large research initiatives at the national laboratory. Faculty members have expertise in cutting-edge research utilizing mammalian genetics and mutagenesis, spectroscopy, high field NMR, x-ray crystallography, computational modeling, mass spectrometry, neutron scattering, and microarray technology. Various biological model systems are investigated, featuring the Oak Ridge National Laboratory Mouse Genetics Research Facility, one of the world's largest resources for studies in mouse genetics and mutagenesis for functional genomics.

We are seeking outstanding students with backgrounds in the biological, physical or computational sciences. Graduate student stipends are $18,000 with full tuition waiver.

To apply, visit: **http://lsd.ornl.gov/gst/**
Graduate School in Genome Science and Technology
Dr. Jeffrey M. Becker, Director
1060 Commerce Park
Oak Ridge, TN 37830-8026
jbecker@utk.edu

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Chemistry

BIOMIRA, USA, a dynamic biopharmaceutical company applying innovative technology to immunotherapeutic products for cancer treatment, has the following opportunity to join our expanding organization:

GROUP LEADER, DRUG DELIVERY
PhD Staff Position

Responsibilities include leading 5 scientists in the formulation, development and biophysical characterization of liposomal drug delivery systems for biomolecules. Requires a PhD in Chemistry, Biophysics, Pharmacy or related fields and a minimum 8-10 years of academic or industrial work experience as an independent investigator. Must have experience studying lipid-protein interactions and developing liposome-based drug products. Additional experience with electron microscopy, protein chemistry and spectroscopic techniques preferred. Must possess excellent oral, written and interpersonal skills. Previous leadership and project management experience helpful.

We offer a competitive salary & excellent benefits. Only candidates selected for an interview will be notified. Please send resume with salary requirements to:

Biomira USA Inc.
1002 Eastpark Blvd., Cranbury, NJ 08512
Attn: Human Resources, Fax: (609) 655-1755
E-mail: hr.biousa@biomira.com

BIOMIRA
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Genome Therapeutics Corporation

Genome Therapeutics Corporation is translating scientific discoveries into exciting new therapies for the prevention and treatment of disease and the overall improvement of human health. Come join our work!

The following is a list of current openings:

GENOMICS SERVICES BUSINESS
- Manager of Business Development & Sales
- Scientists (PhD, MS and BS levels)

BIOPHARMACEUTICAL BUSINESS
Human Disease Program
- Biostatistician (PhD level)
- Scientists (MS and BS levels)

Anti-Infectives R&D
- Scientists-Biochemistry (PhD, MS and BS levels)
- Scientists-Molecular Biology (MS and BS levels)

Chemistry & Screening
- Asst. Director - Bioanalysis and In-vivo Testing

CORE TECHNOLOGIES
Bioinformatics
- Computational Biologist (PhD)

CORPORATE OPERATIONS & ADMINISTRATION
Administration
- Purchasing Manager/ Sr. Purchasing Agent
- HVAC/Maintenance Mechanic
- Environmental Health & Safety Assistant

Post-Doc Opportunities are also available

We offer a competitive package and a culture that values integrity, innovation, focused performance, teamwork and leadership.

Please forward your resume with job title in the subject line of email to human.resources@genomecorp.com or send via fax to (781) 398-2606.

For more information on these positions and our company, go to:
www.genomecorp.com

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

POSTDOCTORAL POSITION
Department of Immunology

Postdoctoral position available to study the genetic and biochemical events that control the pro-B cell and pre-B cell transition in the human. Ongoing projects include the characterization of patients with defects in B cell development, analysis of factors that influence the assembly of the pre-B cell receptor complex and identification of mechanisms that regulate expansion of early B cell precursors. The applicant should have a Ph.D. or MD/Ph.D. and experience in molecular biology and/or tissue culture. Please send curriculum vitae, statement of research interests, and three letters of reference to:

Dr. M.E. Conley, Department of Immunology
St. Jude Children's Research Hospital
332 N. Lauderdale
Memphis, TN 38105

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

Cornell/Rockefeller/Sloan-Kettering

Interdisciplinary Graduate Training In Chemical Biology

The Training Program in Chemical Biology (TPCB) is a joint undertaking between Cornell University – both the Ithaca campus and the Weill Medical College in New York City (NYC) – and The Rockefeller University and the Sloan-Kettering Institute in NYC. The TPCB is part of a larger Tri-Institutional Program in Chemical Biology, which draws on the unparalleled resources that are available to the three institutions to create a unique research and educational environment. The Tri-Institutional Program will foster groundbreaking achievements in biomedical science by providing access to the most advanced state-of-the-art technologies and opportunities for discovery that few institutions can provide by themselves.

The TPCB will be available to a limited number of outstanding students, who wish to work at the interface between chemistry and biology. Instruction will be provided by the faculty of all the participating institutions. TPCB students will take courses in chemistry and chemical biology while in Ithaca, and courses in the biological sciences while in NYC. TPCB students may pursue their thesis research either in Ithaca and/or in NYC under the guidance of the participating faculty listed below.

Olaf Andersen	Brian Crane	Lorraine Gudas	Tom Muir	Tim Ryan
Barbara Baird	Sam Danishefsky	Tarun Kapoor	Diana Murray	Neal Rosen
Tadhg Begley	Seth Darst	Christopher Lima	Dimitar Nikolov	Tom Sakmar
Stephen Burley	Steven Ealick	Min Lu	Dinshaw Patel	Andrej Sali
Rick Cerione	David Eliezer	Rod MacKinnon	Nikola Pavletich	Stewart Shuman
Brian Chait	Bruce Ganem	Fred Maxfield	Luis Quadri	Milton Werner
Jon Clardy	Jonathan Goldberg	Tim McGraw	Benoit Roux	Hao Wu
		Gero Miesenböck		

Students in the TPCB are fully funded for the duration of their graduate training.
For more information, please go to: www.med.cornell.edu/tpcb
To request application materials, please send a message to tpcb@med.cornell.edu
Application deadline: January 10, 2002

MONTANA STATE UNIVERSITY BOZEMAN

Graduate Training for the Biology of the Future

The post-genomic era of biological research will focus on understanding how complex, inter-linked systems function in living organisms. New combinations of skills, and therefore new kinds of Ph.D. training, will be required of future biological scientists. To address this need, Montana State University announces a new Ph.D. program in the Structure and Function of Complex Biological Systems, funded by the National Science Foundation's IGERT program. This multidisciplinary training program provides students with the opportunity to study with faculty from Biological, Chemical, Mathematical, and Computer Sciences. State-of-the-art research, instrumentation, and computational facilities are available. Research areas encompass, but are not limited to:

- Structural, Molecular, Cellular & Developmental Biology
- Experimental & Computational Neurobiology
- Mathematical Modeling, Bioinformatics & Algorithm Development

Graduate study at MSU offers a unique opportunity to obtain outstanding scientific training in a spectacular mountain environment. Applications and additional information are available at **http://cbs.montana.edu/** or by contacting us at **cbsinfo@cbs.montana.edu** or **(406) 994-7330.** Review of applications will begin after February 21, 2001. *Minorities and underrepresented groups are encouraged to apply. Only citizens and permanent residents of the US are eligible.*

UIC

Graduate Studies in MOLECULAR & CELLULAR PHARMACOLOGY

The Department of Pharmacology at the University of Illinois offers research training leading to a doctoral degree in Pharmacology with active research programs in cardiovascular and lung biology, cell signaling, molecular pharmacology of G proteins, immunopharmacology, molecular and cellular basis of inflammation, and neuroscience. The program is ideal for life science students wishing to specialize in these areas, training with the Department's distinguished faculty and emphasizing intensive work at the molecular and cellular levels. The Department, which also participates in the MD/PhD training program, ranks 9th nationally in extramural research support from the National Institutes of Health. Coursework emphasizes broad exposure to molecular pharmacology and cellular signaling. All students accepted into the program will be provided a competitive stipend as well as full tuition coverage.

For applications and additional information, please visit our website: www.uic.edu/depts/mcph or contact Randal Skidgel, PhD, Director
UIC Dept. of Pharmacology, Graduate Studies
835 S. Wolcott Ave. M/C 868
Chicago, IL 60612-7343 USA
Email: pharmacology-gs@uic.edu

FACULTY POSITION
PROGRAM IN MOTILITY AND INVASION

The Albert Einstein Comprehensive Cancer Center and Anatomy and Structural Biology Department are accepting applications for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level. This appointment is part of the Program in Motility and Invasion of the Cancer Center and comes with significant start up resources. Candidates working in all areas of macrophage biology related to motility, signal transduction, and invasion will be considered.

Requirements include a Ph.D. or M.D. with significant postdoctoral experience, demonstrated research accomplishments, and evidence of the ability to attract extramural support. The successful candidate will be expected to establish a vigorous, externally funded research program; participate in the Motility and Invasion Program of the Cancer Center; and the teaching of graduate and medical students. Applicants should submit curriculum vitae, description of research plans, select publications, and names and addresses of three references to: **Dr. John Condeelis, Chair of the Search Committee, Anatomy and Structural Biology, Albert Einstein College of Medicine, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, New York, NY 10461. E-mail: condeeli@aecom.yu.edu**. *Equal Opportunity Employer.*

POSTDOCTORAL POSITION at the Cardiovascular Institute and Research Center of the University of Pittsburgh. We are seeking candidates with experience in the area of liposome synthesis to participate in the development of medical imaging and therapeutic techniques. Applicants should have a Ph.D. or M.D. degree or extensive expertise in organic synthesis. Applicants with experience in conjugation chemistry of protein and lipid and/or experience in working with cell culture or rodents will be particularly competitive. Please send curriculum vitae and names of three references to: **Flordeliza S. Villanueva, M.D., University of Pittsburgh, Cardiovascular Institute, 200 Lothrop Street, S568 Scaife Hall, Pittsburgh, PA 15213. E-mail: villanuevafs@msx.upmc.edu.**

POSTDOCTORAL POSITION

Available immediately in McLean Hospital/Harvard Medical School to study the effects of psychoactive drugs on neurotransmitter receptors and their gene expression. A strong background in molecular biology is required. Experience in *in situ* hybridization of immunocytochemistry is essential. Applicants with a Ph.D. in neuroscience or related areas should send curriculum vitae and names of three references to: **Dr. Ross Baldessarini, Mailman Research Center, McLean Hospital, 115 Mill Street, Belmont, MA 02478. FAX: 617-855-3479; e-mail: rjb@mclean.org.**

A POSTDOCTORAL POSITION is available immediately to investigate the regulation of apoptotic signaling in primary cells by the extracellular matrix. Areas of emphasis include receptor isolation and identification, intracellular signaling, and *in vivo*/*in vitro* studies. Experience in cell and molecular biology is required. Good verbal and writing skills are also required. Please send curriculum vitae and names of three references to: **Dr. Yvonne Kapila, Department of Stomatology, University of California San Francisco, 513 Parnassus Avenue, Box 0512, HSW 604, San Francisco, CA 94143-0512. FAX: 415-502-4990; e-mail: ykapila@itsa.ucsf.edu.** *UCSF is an Affirmative Action/Equal Opportunity Employer.*

RESEARCH ASSOCIATE/
SENIOR TECHNICIAN
University of Southern California

Responsible for targeting genes in ES cells. Significant ES cell experience required; microinjection desirable. Résumé to: **Dr. R. Maxson, USC/Norris Cancer Center, 1441 Eastlake Avenue, Room 7310, Los Angeles, CA 90033. E-mail: maxson@hsc.usc.edu.**

POSITIONS OPEN

JUNIOR/ASSISTANT SPECIALIST

Duties of position: Study mechanism and cell cycle regulation of the initiation of DNA replication in *Drosophila* with emphasis on mechanisms controlling the function of the origin recognition complex (DmORC). Candidate will use biochemical techniques to purify components of the prereplication complex and establish *in vitro* assays to study protein/protein and protein/DNA interactions and identify posttranslational modifications using mass spectrometry and radiolabeling. Candidate must be able to organize and conduct research independently and present own results in a scientific format on meetings and in publications. Minimum qualifications required: B.S. in the biological sciences. Candidates must have research backgound in cell and molecular biology and in cell culture techniques. Knowledge of the field of DNA replication and of molecular techniques as applied to *Drosophila melanogaster* to study protein function is required. Send curriculum vitae and three names of references to: **Dr. Michael Botchan, University of California, Molecular and Cell Biology, 401 Barker Hall Number 3202, Berkeley, CA 94720-3202**. Closing date: August 27, 2001. Approximate date of hire: September 1, 2001. Salary range commensurate with experience. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL STAFF FELLOW
POSITION IN VACCINES
U.S. Food and Drug Administration
Rockville, Maryland

A Postdoctoral FDA Staff Fellow position is available in the Office of Vaccines Research and Review, Center for Biologics Evaluation and Research, U.S. Food and Drug Administration, for a Scientist with a Doctoral degree in molecular microbiology, immunology, or a realted field. The individual will review investigational viral and/or bacterial vaccine applications. The candidate should have background in relevant laboratory techniques, e.g., immunological, biochemical, molecular, and microbiological techniques. Previous Fellowship experience is desirable. The initial appointment is for two years. Candidates must have completed all requirements from an accredited institution for a Doctoral degree and be eligible for the FDA Staff Fellow program. *Requirements include U.S. citizenship or U.S. permanent residency.* The salary starts at $53,156 but may be higher depending on qualifications. The candidate may also be eligible for the PHS Commissioned Corporation. Please mail curriculum vitae to: **Kerin Denault, Office of Vaccines Research and Review, 1401 Rockville Pike, Suite 370N/HFM-475, Rockville, MD 20852-1448. Telephone: 301-827-3070; FAX: 301-827-3532**. *FDA is an Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH POSITIONS. The Department of Molecular Biology at Princeton University currently has Postdoctoral positions available in the areas of molecular biology, biochemistry, physics, neuroscience, and genetics. Candidates are required to have a Ph.D. or M.D. in related field. Interested applicants should send curriculum vitae, references, and a brief description of research interests to: **Nancy Barthelemy, Department of Molecular Biology, Princeton University, Lewis Thomas Laboratory, Princeton, NJ 08544. FAX: 609-258-3980**. *Princeton University is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH SCIENTIST. The Molecular Cardiology Institute, a small, private, not-for-profit laboratory, seeks a Molecular and Cell Biologist with strong background in cardiovascular research. Independent thinker with proven skills as writer of scientific papers. Experience with cardiomyocytes isolation and culture, microinjection, protein expression, HPLC, immunocytochemistry, and mitochondria extraction and function analysis. *Must be U.S. citizen or permanent resident.* Write or e-mail to: **Jose Marin, M.D., Director, 75 Raritan Avenue, Highland Park, NJ 08904. E-mail: tmcni@att.net.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS
Cytoskeleton and Cell Polarity

Two Postdoctoral Research positions are immediately available. The first position will employ a combination of genetic and molecular methods to examine the role of spectrin in polarized cells (see *J. Cell Biol.* **149**:647–656, 2000 and *J. Neuroscience* **21**: 4215–4224, 2001). The second position will combine genetic methods and electron microscopy to study the role of alpha actinin in striated muscle (see *J. Muscle Res. and Cell Motil.* **21**:705–713, 2000). Both positions will make use of the fruit fly *Drosophila* as a model organism. Preference will be given to candidates with experience in one or more of the following: *Drosophila* genetics, molecular biology techniques, and immunocytochemistry. Ph.D. required. Salary is commensurate with experience. Send curriculum vitae and contact information for three references by October 1, 2001, to:

Ronald Dubreuil, Ph.D.
University of Illinois at Chicago
Department of Biological Sciences (MC 067)
840 West Taylor Street
Chicago, IL 60607
E-mail: ron@uic.edu

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REGULATORY HEALTH PROJECT
COORDINATOR/MANAGER
U.S. FOOD AND DRUG ADMINISTRATION
(FDA)
Positions in Vaccines
Rockville, Maryland

Regulatory Health Project Coordinator/Manager positions are available in the Office of Vaccine Research and Review, Center for Biologics Evaluation and Research, FDA. The position requires at a minimum a B.S. degree in biology, molecular microbiology, immunology, chemistry, or a related field. Registered Nurses (RN) are also eligible. The individual will manage projects for investigational viral and/or bacterial vaccine applications. The candidate should have strong organizational and communication skills. *Requirements include U.S. citizenship.* The positions range from GS-11 (starting at $44,352) to GS-13 (starting at $63,211). The candidate may also be eligible for the PHS Commissioned Corporation. Please mail curriculum vitae to: **Kerin Denault, Office of Vaccines Research and Review, 1401 Rockville Pike, Suite 370N/HFM-475, Rockville, MD 20852-1448. Telephone: 301-827-3070; FAX: 301-827-3532.** *FDA is an Equal Opportunity Employer. This agency provides reasonable accomodations for applicants with disabilities.*

POSTDOCTORAL POSITIONS
RNA Molecular Biology

Positions are available to study fundamental aspects of mRNA processing, turnover and translation, and their application to inherited genetic disorders and cancer. Experimental approaches will include protein biochemistry, RNA molecular biology, proteomics, and gene arrays. Candidates must have a strong background in biochemistry or molecular biology. Experience in cell biology, protein biochemistry, or array analysis is highly desirable. Send curriculum vitae and names of three references to: **Dr. Daniel R. Schoenberg, Molecular and Cellular Biochemistry, The Ohio State University, 1645 Neil Avenue, Columbus, OH 43210. E-mail: schoenberg.3@osu.edu; website: http://www.med.ohio-state.edu/mcbiochem/schoenberg.htm.**

POSTDOCTORAL POSITION is available at the Van Andel Research Institute to study the role of integrin-mediated signaling and integrin function in prostate cancer. Transgenic and knockout mouse and tissue culture models will be developed and analyzed. More information at **website: http://www.vai.org/vari/mirantilab.htm**. A strong background in molecular and cell biology is preferred. Highly motivated individuals are encouraged to send curriculum vitae to: **Cindy Miranti, Ph.D., Van Andel Research Institute, 333 Bostwick Avenue, Grand Rapids, MI 49503. E-mail: cindy.miranti@vai.org**. *Equal Opportunity/Affirmative Action Employer.*

University of Connecticut Health Center

Ph.D. in Biomedical Science and NIH sponsored Medical Scientist Training Program (M.D./Ph.D.), Dentist Scientist Training Program (D.M.D./Ph.D.), and Dentist Scientist Award (Dental Clinical Specialty/Ph.D.)

The University of Connecticut Health Center offers exceptional research opportunities spanning **Cell Biology, Cellular and Molecular Pharmacology, Developmental Biology, Genetics, Biochemistry and Molecular Biology, Immunology, Neuroscience, and Skeletal, Craniofacial, and Oral Biology.** Under our Strategic Plan more than 40 new faculty have recently been added. Located in the town of Farmington just outside of Hartford, mid-way between Boston and New York, the Health Center offers high quality research training combined with access to a broad range of cultural and recreational activities. Key features of our program are:

- ◆ Integrated admissions with access to more than 100 laboratories.
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- ◆ Excellent education in a safe and stimulating environment.

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- **Molecular and Human Genetics**
- **Molecular Pathobiology**
- **Neuroscience**
- **Pharmacology/Physiology**

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VISIT WWW.MCPHU.EDU
E-MAIL MICHELE.TYMES@DREXEL.EDU

UAB THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Cellular and Molecular Biology Program

The Cellular and Molecular Biology (CMB) Graduate Program at the University of Alabama at Birmingham (UAB) Medical Center includes over 120 faculty from the Departments of Biochemistry and Molecular Genetics, Cell Biology, Microbiology, and Neurobiology. UAB consistently ranks among the top 20 medical centers in federal grant support. Research strengths of the CMB faculty include:

- Cell Physiology and Signaling
- Extracellular Matrix and Cell Adhesion
- Gene Regulation and Expression
- Immunology
- Macromolecular Structure and Function
- Molecular Genetics of Diseases
- Molecular Pathogenesis
- Neurobiology
- Virology

The broad, interdisciplinary nature of the CMB Program allows students to rotate in laboratories with diverse research interests before choosing where they will complete their dissertation project. Financial support includes a stipend of $17,500 per year, health insurance, and all tuition and fees. For more information, contact:

The CMB Graduate Program
BBRB Room 260
1530 Third Avenue South
The University of Alabama at Birmingham
Birmingham, AL 35294-2170

Phone: 1-800-262-7764
Fax: 1-205-975-2536
E-mail: cmb@uab.edu
Web: www.cmb.uab.edu

www.lsc.psu.edu

PENNSTATE Life Sciences Consortium

INTEGRATIVE BIOSCIENCES GRADUATE PROGRAM

The Pennsylvania State University's Life Sciences Consortium (LSC) is pleased to offer an interdisciplinary graduate program in Integrative Biosciences. This program spans the Colleges of Agricultural Sciences, Engineering, Health and Human Development, Liberal Arts, the Eberly College of Science on the University Park campus and the College of Medicine in Hershey. The goal of this program is to foster collaborative, innovative research in the life sciences and to provide unique training experiences for graduate students.

Options include:

- Biomolecular Transport Dynamics
- Cell and Developmental Biology
- Cellular and Molecular Mechanisms of Toxicity
- Chemical Biology
- Ecological and Molecular Plant Physiology
- Immunobiology
- Molecular Medicine
- Neuroscience
- Nutrition Sciences

40 Fellowships are available to candidates with outstanding credentials. Information and applications can be obtained from the LSC web site: www.lsc.psu.edu/GradEd/home.html or from Janice Kennedy, 519 Wartik Laboratory, The Pennsylvania State University, University Park, PA 16802. E-mail address: lscgradadm@mail.biotec.psu.edu and phone: (814) 865-3155.

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

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION available immediately in the Neuroimaging Research Laboratory, Long Beach Veterans Administration Healthcare System, Long Beach, California. We are a group of Investigators with broad interests who use behavioral, physiological, and neuroimaging techniques as needed for our research in cognitive or sensorimotor systems. We are looking for a recent Ph.D. to assist in and enhance current research programs in cortical neuroplasticity. The successful applicant will have a Ph.D. in a relevant field, a background in physiological psychology or cognitive neuroscience, and be willing to learn MRI techniques in a hands-on environment. This is a career-path position with long-term possibilities. *U.S. citizenship is required for employment in the VA.* Please send curriculum vitae and cover letter to: **Jessica Turner, Ph.D., Long Beach VA Healthcare System, Neuroimaging Research Laboratory, 5901 East Seventh Street 151–J, Long Beach, CA 90822. FAX: 562-961-8017; e-mail: jessica.turner@med.va.gov.**

TWO POSTDOCTORAL POSITIONS
Massachusetts General Hospital/ Harvard Medical School

Position available to study genetics of cutaneous melanoma. Experience in transgenic mice technology, murine cancer models, and genetic techniques is required. M.D., Ph.D., or M.D./Ph.D. and previous experience in molecular and cellular biology techniques is preferred. Second position is to study translational cellular immunotherapy of melanoma using dendritic cell and gene transfer approaches. M.D., Ph.D., or M.D./Ph.D. and experience in techniques of cellular immunology, immunoassays, and flow cytometry necessary.

Send curriculum vitae and names of three references to: **Kimberly Kwitkiwski; FAX: 617-724-2745; e-mail: kkwitkiwski@partners.org.**

POSTDOCTORAL POSITIONS
Emory University Department of Neurology

Two Postdoctoral positions are available for research on the role of the subthalamic nucleus in basal ganglia function under normal and Parkinsonian conditions. The studies will utilize a combination of extracellular electrophysiologic recording, microdialysis, and EEG methods. Candidates should have expertise in at least one of these techniques. The Postdoctoral Fellows will be encouraged to collaborate with other researchers and to participate in the numerous educational activities on basal ganglia research offered at Emory University. Please send curriculum vitae and two references to: **Thomas Wichmann, M.D., Associate Professor, Emory University, Department of Neurology, 1639 Pierce Drive, Atlanta, GA 30322. Telephone: 404-727-3511; FAX: 404-737-3157; e-mail: twichma@emory.edu.**

POSTDOCTORAL POSITIONS immediately available in the laboratories of **Dr. Paul Dent** and **Dr. Steven Grant.** Projects available for study include signal transduction, cell cycle, and survival control in primary hepatocytes; roles of radiation- and chemotherapeutic drug-induced MAP kinase signaling in cell cycle and survival regulation in hematopoietic and carcinoma cells. Applicants must have a strong foundation in molecular and cellular biology techniques. Send applications to: **Dr. P. Dent** or **Dr. S. Grant, Massey Cancer Center, Box 980058, Virginia Commonwealth University, Richmond, VA 23298. E-mail: pdent@hsc.vcu.edu** or **stgrant@hsc.vcu.edu.**

A POSTDOCTORAL POSITION is available to study mechanisms of *M. avium* and *M. tuberculosis* pathogenesis (interaction with macrophages and mucosal cells). A Ph.D. or M.D. degree and a strong background in molecular biology and biochemistry or cell biology are required. Please send curriculum vitae and two support letters to: **Dr. Luiz Bermudez, Kuzell Institute for Infectious Diseases, 2200 Webster Street, San Francisco, CA 94115. E-mail: luizb@cooper.cpm.org.**

POSITIONS OPEN

ROBERT H. LURIE COMPREHENSIVE CANCER CENTER
OF NORTHWESTERN UNIVERSITY

ONCOGENESIS AND DEVELOPMENTAL BIOLOGY

The NCI-funded program in oncogenesis and developmental biology at the Robert H. Lurie Comprehensive Cancer Center has positions available for **POSTDOCTORAL TRAINING.** Faculty mentors include:

Wade Bushman, M.D., Ph.D.
Jonathan Jones, Ph.D.
Rex Chisholm, Ph.D.; Chung Lee, Ph.D.
Susan Cohn, M.D.; Janardan Reddy, M.D.
J. Douglas Engel, Ph.D.; Paula Stern, Ph.D.
Kathleen Green, Ph.D.; Zhou Wang, Ph.D.
Robert Holmgren, Ph.D.
Teresa Woodruff, Ph.D.
Philip Iannaccone, M.D., Ph.D.

Candidates must be U.S. citizens or permanent residents with less than two years of postdoctoral experience.

Applicants should send their curriculum vitae, statement of research interests, selection of mentor, and letters of reference to: **Robin Leikin, Ph.D., Administrative Director, Training Programs, Robert H. Lurie Comprehensive Cancer Center, Northwestern University, 303 East Chicago Avenue, Chicago, IL 60611.**

Northwestern University is an Equal Opportunity Employer.

POSTDOCTORAL POSITION available immediately at the National Center for Food Safety and Technology, a consortium of Illinois Institute of Technology, the U.S. Food and Drug Administration, and leading food companies. Work with FDA Scientists on research related to the safety assessment of genetically modified foods to determine the digestion stability of various food proteins and the relationship between digestibility and protein structure. Ph.D. in biochemistry, immunology, food chemistry, or related areas with expertise in protein biochemistry and protein sequence and structural databases is required. Knowledge of food allergy and immune response is a plus. Visit **website: http://www.ncfst.iit.edu.** Respond to **e-mail: perret@iit.edu; FAX: 312-567-3450.** *Equal Opportunity Employer.*

SCIENTIFIC/REGULATORY AFFAIRS
Consumer HealthCare Products Association Washington, D.C.

Position open: **DIRECTOR** level in Science and Technology Department reporting to the Senior Vice President and Director of Science and Technology.

Candidate should have a Ph.D. in pharmacology, toxicology, or allied medical sciences. The position encompasses broad responsibilities for committee management relating to scientific/regulatory issues affecting over-the-counter (OTC) medicines and dietary supplements including interaction with government agencies. Responsibilities also include management of annual scientific conferences.

Please send résumé care of: **Science and Technology Department, Consumer HealthCare Products Association, 1150 Connecticut Avenue, N.W., Washington, DC 20036-4193. E-mail: job@chpa-info.org.** No telephone inquiries.

ADVANCED POSTDOCTORAL FELLOWSHIP. Laboratory of **Stephen B. Liggett** is seeking a Fellow with potential for subsequent faculty position at the University of Cincinnati College of Medicine. Research expertise in G protein-coupled receptor biology, pharmacogenetics, or transgenic mice preferable. Send résumé to: **Stephen B. Liggett, University of Cincinnati College of Medicine, 231 Albert Sabin Way, Room G167, P.O. Box 670564, Cincinnati, OH 45267-0564. Telephone: 513-558-0484; FAX: 513-558-0835; e-mail: stephen.liggett@uc.edu.** *The University of Cincinnati is an Equal Opportunity Employer and encourages the application of women and minorities.*

POSITIONS OPEN

POSTDOCTORAL POSITION
HIV Research

NIH-funded laboratory seeks Postdoctoral. Our research concerns HIV-1 and SIV pathogenesis, therapy, and vaccine development. Area of interest includes the identification and characterization of viral and host factors that may protect against active HIV infection. These studies may lead to the development of a vaccine or new therapeutic strategies to prevent or control HIV-1 infection. A Ph.D., M.D., or equivalent degree with background in molecular or cell biology is required. Experience with viral gene transfer, protein expression, or cell culture preferred. Job will remain open until filled. Send curriculum vitae and the addresses of three references to: **Tuofu Zhu, M.D., Department of Laboratory Medicine, University of Washington, Box 358070, 960 Republican Street, Room 362, Seattle, WA 98195-8070. FAX: 206-732-6055; e-mail: tzhu@u.washington.edu.**

Two **POSTDOCTORAL POSITIONS** are available immediately, the first to clone a bacterial toxin and the second to study the cytokine signaling (for examples, see **Mukhopadhyay et al.,** *JBC*, in press; **Manna et al.,** *JBC* **275:8549, 2000; Mukhopadhyay et al.,** *JBC* **274:15978, 1999; Darnay et al.,** *JBC* **274:7724, 1999**). Applicants should have a recent Ph.D. in molecular biology/biochemistry or related discipline and first-author publications in major journal. Experience in apoptosis, gel shift assays, transfections, gene expression, cDNA cloning, and protein purification is preferable. Please mail/e-mail your application with a list of three references to: **Professor Bharat B. Aggarwal, Cytokine Research Section, The University of Texas M.D. Anderson Cancer Center, 1515 Holcombe Boulevard, Box 143, Houston, TX 77030. E-mail: aggarwal@utmdacc.mda.uth.tmc.edu** or **aggarwal@mdanderson.org.**

POSTDOCTORAL FELLOW
MOLECULAR IMAGING

Two Postdoctoral positions are available in the molecular imaging laboratory. Candidates should have experience in molecular biology and viral delivery systems or signal transduction. Send curriculum vitae to: **Vikas Kundra, M.D., Ph.D., Department of Diagnostic Radiology, Box 57, University of Texas M.D. Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, TX 77030. E-mail: vkundra@di.mdacc.tmc.edu.** *Equal Opportunity Employer. The University of Texas M.D. Anderson Cancer Center values diversity in its broadest sense. Diversity works at M.D. Anderson. Equal Employment Opportunity/Affirmative Action. Smoke-free environment.*

SIGNAL TRANSDUCTION

POSTDOCTORAL POSITION to study the role of paxillin and associated proteins in integrin-mediated cell adhesion, growth factor signaling, and cytoskeletal organization (see *Nat. Cell Biol.* **2:E231, 2000**). Experience in cell and molecular biology techniques essential. A background in cell adhesion/signaling desirable. Send curriculum vitae and names of three references to: **Dr. Chris Turner, Department of Cell and Developmental Biology, SUNY Upstate Medical University, 750 East Adams Street, Syracuse, NY 13210. E-mail: turnerce@upstate.edu.** *An Affirmative Action/Equal Employment Opportunity Employer.*

POSTDOCTORAL POSITION available immediately in a laboratory studying the role of phosphorylation of the inositol 1,4,5-trisphosphate receptor in the regulation of signal transduction. Previous electrophysiology experience is required. Please send letter of interests, curriculum vitae, and the names of three references to: **Dr. Alan Fein, Department of Physiology, University of Connecticut Health Center, Farmington, CT 06030-3505. FAX: 860-679-1269; e-mail: afein@neuron.uchc.edu.** *UCHC is an Equal Opportunity Employer; Minorities/Females/Veterans/People With Disabilities.*

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IF YOUR INTEREST IS
CANCER RESEARCH
AND YOU DESIRE TO TRAIN WITH THE BEST
JOIN OUR TEAM AT THE
National Cancer Institute

POSTDOCTORAL (PH.D./M.D.) FELLOWSHIP OPPORTUNITIES

Biochemistry	*Drosophila* Genetics	Molecular Immunology
Biology	Epidemiology	Molecular Radiobiology
Biomedical Science	Functional Genomics	Molecular Virology
Biostatistics	Genetics	Murine Genetics
Cellular Biology	HIV Research	Mouse Genetics
Cellular Immunology	Immunology	Nutrition
Chemistry	Molecular Biology	Pharmacology
Developmental Biology	Molecular Genetics	Virology

The National Cancer Institute is the Nation's primary agency leading the fight against cancer by supporting and conducting ground-breaking research in cancer biology, causation, prevention, detection, treatment, and survivorship. NCI facilities are located in Bethesda, Gaithersburg and Frederick, Maryland, and are the best funded and equiped research laboratories in the United States. As a member Institute of the National Institutes of Health, the NCI offers an environment for postdoctoral fellows to interact with scientists from a wide range of disciplines within the life/medical sciences, and attend lectures given by national and international renowned scientists.

The postdoctoral fellowship experience at the NCI can serve as a first postdoctoral training assignment, or offer more experienced postdoctoral scientists an opportunity to further their training in more advanced methods, to acquire new research capabilities, to make changes in the direction of their research, or to receive training in fundamental sciences and clinical disciplines for the purpose of enhancing the transfer of biotechnology to cancer clinical programs. Program duration is normally 2 to 5 years. Candidates must have less than 5 years postdoctoral experience. U.S. citizenship, permanent residency (green card), or current U.S. work authorization is required.

Provide resume/CV, bibliography of publications, three references and a cover letter stating your research interest. Also indicate in the cover letter that you are applying in reference to source code 2001Science Magazine. Send to: **National Cancer Institute, 6116 Executive Blvd, Room 502, Bethesda, MD 20892-8342, Attn: Keith Ariola, or by fax at (301) 402-3509, or via email ariolak@mail.nih.gov**

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mayo

MAYO CLINIC
CANCER GENETICS

A postdoctoral position is available immediately for an individual who is interested in studying genetic susceptibility in prostate cancer. The lab currently focuses on identification of genetic defects in prostate cancer using approaches ranging from functional genomics to identify candidate genes, DHPLC technology to detect genetic defects of candidate genes in cancer patients, mammalian cell culture analysis to delineate the function and mechanisms of the mutant genes in tumorigenesis (please see *Nature Genetics* **26**:146-47, 2000). Several genes that are mutated in prostate cancer have been identified. The candidate will be required to undertake further genetics and functional analysis of these genes in prostate cancer. Applicants should have a Ph.D. degree, be self-motivated and have strong research background in cancer genetics and/or tumor biology. Salary will be determined by the successful candidate's experiences. There is also an attractive benefit package. The clinic research environment at Mayo Clinic is excellent. Those interested in applying should send a curriculum vitae as well as the names, addresses, and phone numbers of three references to:

Wanguo Liu, Ph.D.
Division of Experimental Pathology
Mayo Clinic/Mayo Medical School
200 First Street SW, Hilton Building, Room 860B
Rochester, MN 55905
E-mail: liu.wanguo@mayo.edu

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CHIEF, LABORATORY OF BIOPHYSICAL CHEMISTRY
NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

The Division of Intramural Research (DIR) of the National Heart, Lung & Blood Institute (NHLBI), National Institutes of Health (NIH) is soliciting applications from outstanding individuals for the position of Chief of the Laboratory of Biophysical Chemistry (LBC). The LBC has been the focus of the biophysics and structural biology program in the DIR. With the intent of expanding this program, a candidate with an internationally recognized research program in biophysics or structural biology is being sought to lead this program. Special consideration will be given to candidates with research excellence and demonstrated leadership abilities in areas of biophysics/structural biology that enhance or complement existing research in the LBC such as NMR and optical spectroscopy, protein mass spectrometry, computational biophysics or a related discipline. Specific areas of interest include protein structure including detection and characterization of post-translational modifications, receptor/substrate or protein/DNA interactions, and the study of forces involved in biological function at the atomic level. The incumbent will be funded from funds within the DIR and will be expected to maintain vibrant and innovative scientific productivity in addition to providing strong leadership. The compensation of the Chief of the LBC will be commensurate with experience and qualifications.

Applicants should submit a curriculum vitae together with a statement of research interests and plans and should arrange for three letters of recommendation to be sent to:

Ms. Christine Fisher, Personnel Office
National Heart, Lung, and Blood Institute
Building 31, Room 5A28
Bethesda, MD 20892-2484

Applications must be received no later than **October 1, 2001**.

The NIH is an Equal Opportunity Employer. Applications from women, minorities, and persons with disabilities are strongly encouraged. The NHLBI/NIH is a smoke-free workplace.

EAST TENNESSEE STATE UNIVERSITY

An NIH-funded **POSTDOCTORAL POSITION** in molecular pathogenesis and host recognition of pathogens is available immediately in the Department of Surgery at the James H. Quillen College of Medicine. We are seeking applicants using molecular approaches to explore the interactions of *C. albicans* cell wall constituents (pathogen-associated molecular patterns) with macrophages and neutrophils. Candidates must have experience in RT-PCR and related molecular techniques. Applicants with a background in receptor/ligand interactions, signal transduction, and/or transfection of primary cells are particularly sought. Applicants must have an earned Doctorate in an appropriate field and *U.S. citizenship or valid work visa*. Interested individuals should submit an application containing a brief statement of research experience, curriculum vitae, and the names and complete addresses of three references to: **Dr. David L. Williams, Department of Surgery, James H. Quillen College of Medicine, East Tennessee State University, Box 70575, Johnson City, TN 37614. Telephone: 423-439-6363; FAX: 423-439-6259; e-mail: williamd@etsu.edu**. Screening of applicants will begin immediately and the search will continue until a suitable candidate is found. *ETSU is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS AVAILABLE
University of Pennsylvania
Philadelphia, Pennsylvania

Dr. Ronald N. Harty: virus/host interactions and molecular mechanisms of negative-sense RNA virus assembly and budding. Experience in molecular virology desirable. **E-mail: rharty@vet.upenn.edu**.

Dr. J. Oriol Sunyer: evolutionary, molecular, and cellular studies on the role of complement in innate and adaptive immunity using a fish model. Experience in molecular biology and/or immunological techniques. **E-mail: sunyer@vet.upenn.edu**.

Dr. Bruce D. Freedman: mechanisms of HIV-1/chemokine receptor-mediated signaling and role in virus tropism for human macrophages and T lymphocytes. Experience using patch clamp and confocal microscopy or molecular biological techniques. **E-mail: bruce@vet.upenn.edu**.

E-mail curriculum vitae and three references to appropriate Professor.

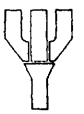
POSTDOCTORAL POSITION available immediately to study mechanisms of terminal cardiac differentiation. Projects involve the use of several genetically engineered mouse models. Candidates will be involved in all aspects of biochemical and physiological evaluation. Candidates should be highly motivated and have a strong background in molecular biology.

Please send curriculum vitae and names of three references to: **Dr. Robb MacLellan, Cardiovascular Research Laboratories, UCLA School of Medicine, MRL 3-645, 675 C.E. Young Drive, Los Angeles, CA 90095-1760**.

POSTDOCTORAL POSITION available in stem cell laboratory at the University of California, San Diego. Work involves studies on stem cell plasticity in murine models. Ph.D. or similar terminal degree required. Send curriculum vitae and names of three references to: **Dr. E. Carrier; e-mail: mrichards@ccis2.ucsd.edu; FAX: 858-534-7340**.

Functional genomics **POSTDOCTORAL POSITIONS** as part of an interdisciplinary research team using advanced FISH, microarray, real-time, and computational technologies to determine how chromatin structure regulates gene expression. Self motivated individuals trained in molecular biology, genetics, and/or biochemistry are encouraged to apply. Applicants should forward their curriculum vitae and three letters of reference to: **Dr. S. A. Krawetz, C.S. Mott Center for Human Growth and Development, Wayne State University School of Medicine, 275 East Hancock, Detroit, MI 48201. E-mail: steve@compblo.med.wayne.edu**. *WSU is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN



POSTDOCTORAL POSITION
EMORY UNIVERSITY

A Postdoctoral position is available for electrophysiological studies of glutamate and GABA receptors in the basal ganglia. Research projects include study of GABA-B, kainate, and metabotropic glutamate receptor functions in basal ganglia using *in vitro* slice electrophysiology techniques. Applicants must have a good background in intracellular recording and slice electrophysiology procedures. Excellent laboratory setup and salary will be provided upon qualifications. Send curriculum vitae and three letters of recommendation to: **Yolanda Smith, Yerkes Primate Center, Emory University, 954 Gatewood Road, N.E., Atlanta, GA 30322 U.S.A.** Applications by e-mail are also accepted (**e-mail: yolands@rmy.emory.edu**). *Emory University is an Affirmative Action/Equal Opportunity Employer Institution.*

POSTDOCTORAL POSITION available for recent Ph.D. to study genetic regulation of the secretion of apo B-containing lipoproteins (*J. Lipid Res.* **42**:844–855, 2001). The candidate will conduct both animal and cell studies to elucidate mechanisms underlying differential apo B secretion rates in congenic mouse strains and participate in fine mapping and positional cloning of genes regulating apo B secretion. A strong background in molecular biology is essential. Experience with mouse models is desirable. Send curriculum vitae and contact information of three references to: **Li-Shin Huang, Ph.D., Department of Medicine, Division of Preventive Medicine and Nutrition, Columbia University, 630 West 168th Street, PH 10-305, New York, NY 10032. E-mail: lh99@columbia.edu; FAX: 212-305-3213**. *Columbia University is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE/POSTDOCTORAL POSITION available immediately to study the involvement of nuclear matrix proteins in DNA double-strand break repair (DSB) and cell-cycle checkpoint control in mammalian cells. Applicants should have a strong background in protein biochemistry and molecular biology. The Lankenau Institute for Medical Research is located in the suburbs of Philadelphia in a modern research facility equipped to support state-of-the-art biomedical research. Send curriculum vitae and names of three references to: **Thomas D. Stamato, Ph.D., The Lankenau Institute for Medical Research, 100 Lancaster Avenue, Wynnewood, PA 19096. FAX: 610-645-2205; e-mail: stamatot@mlhs.org**. *Equal Opportunity Employer.*

POSTDOCTORAL POSITION
CIRCADIAN CLOCKS

A Postdoctoral position is available immediately to investigate the circadian control of olfaction in *Drosophila melanogaster* (see *Nature* **400**:375–378, 1999). Training in systems-level electrophysiology is essential and experience with *Drosophila* preferred. Interested candidates should send (FAX or e-mail) their curriculum vitae and contact information (e-mail address and telephone number) for three references to: **Dr. Paul Hardin, Department of Biology and Biochemistry, University of Houston, Houston, TX 77204-5513. FAX: 713-743-2636; e-mail: phardin@uh.edu; website: http://www.bchs.uh.edu**.

POSTDOCTORAL POSITION: NIH-funded position available to study B cell differentiation in the germinal center (including mechanisms of isotype switching and somatic hypermutation) using molecular and cellular approaches as well as transgenic/knockout studies. Send résumé and names of three references to: **Dr. Erik Selsing, Department of Pathology, Tufts University School of Medicine, 136 Harrison Avenue, Boston, MA 02111. E-mail: erik.selsing@tufts.edu**.

POSITIONS OPEN

Universities Space Research Association (USRA) is seeking a recent (zero to three years) **PH.D. GRADUATE** with a background in experimental physics to work with the X-ray astronomy group at NASA/Marshall Space Flight Center's National Space Science and Technology Center (NSSTC). Candidates should ideally possess a knowledge of X-ray optics and nuclear instrumentation and have an interest in X-ray astronomy. The selected candidate will help develop hard X-ray balloon payloads and large-area, high-resolution X-ray optics for future satellite missions. Excellent salary compensation and benefits package are provided. Applicants should submit a cover letter and résumé with salary requirements to: **Universities Space Research Association (USRA), Attention: Human Resources/X-Ray Astronomy Postdoctoral, 4950 Corporate Drive, Suite 100, Huntsville, AL 35805**. *USRA is an Equal Employment Opportunity/Affirmative Action Professional Employer.*

POSTDOCTORAL SCIENTIST
Viral Gene Expression
Columbia University

A Postdoctoral position is immediately available to study KSHV and host cell gene expression related to cell transformation and virus latency using microarray and SAGE technologies. Applicants must have experience and excellent skills in basic molecular biology. Starting salary is $38,000 per annum and housing through Columbia is available. Please send curriculum vitae, transcripts, and three letters of recommendation by mail or FAX (not e-mail): **Dr. Yuan Chang, Department of Pathology, Physicians and Surgeons 14-442, Columbia University, 630 West 168th Street, New York, NY 10032. Website: http://pathology.cpmc.columbia.edu/C&M/CM_LAB.html**.

POSTDOCTORAL POSITION
Bt Toxins and Nematodes

Supported position available to study *Bacillus thuringiensis* toxins using *C. elegans* and other nematodes. Research possibilities include studying genes involved in Bt resistance using genetics and molecular biology, understanding toxin action using molecular and cell biology and microarray analysis, and screening for new Bt toxins. Candidates should recently have obtained or be about to obtain a Ph.D. and have a strong record of research accomplishments. Send curriculum vitae and three letters of recommendation to: **Dr. Raffi V. Aroian, Section of Cell/Developmental Biology, University of California, San Diego, La Jolla, CA 92093-0349. FAX: 858-822-2003; e-mail: raroian@ucsd.edu**.

POSTDOCTORAL TRAINING OPPORTUNITY. Applications are invited for a mentored, integrated research and teaching Postdoctoral Fellowship (80% research, 20% teaching) that is available to study the interaction of cardiovasvular, renal, and endocrine risk factors in the development of hypertension. The research uses techniques from whole animal (radiotelemetry) to molecular (DNA microarray). Requires Ph.D. or equivalent and excellent communication skills. Salary will be commensurate with qualifications. Submit curriculum vitae and names of three references to: **Ms. Carleen McNeely, CV Postdoctoral Search, Division of Basic Biomedical Sciences, The University of South Dakota School of Medicine, 414 East Clark Street, Vermillion, SD 57069-2390**. Review of applications will begin August 24, 2001, and continue until the position is filled. Information about the Division can be found at **website: http://www.usd.edu/biomed/**. *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS
***Salmonella* Pathogenesis**

Postdoctoral positions available to study *Salmonella* pathogenesis and cell-cell signaling at Ohio State University. Visit the laboratory **website: http://www.biosci.ohio-state.edu/~microbio/ba.html**. Send curriculum vitae and letters of reference to: **Dr. Brian Ahmer, Department of Microbiology, 376 Biological Sciences Building, 484 West 12th Avenue, Columbus, OH 43210**.

PARTNERS

MULTIPLE POSITIONS LABORATORY FOR DRUG DISCOVERY IN NEURODEGENERATION

Partners HealthCare System, Inc. and its Program in Neurodegenerative Diseases at Harvard Medical School invite applications for multiple positions within our new drug discovery facility.

The Laboratory for Drug Discovery in Neurodegeneration, to be located in MIT University Park, Cambridge, MA, will serve the research communities of Massachusetts General, Brigham and Women's, and McLean Hospitals as well as work closely with basic science laboratories in Harvard Medical School. Combining new drug discovery technologies in assay development, high-throughput screening, and medicinal chemistry, this innovative academic laboratory will function as a unique model of drug discovery, highlighting Partners commitment to identify novel neurodegenerative disease targets and potential therapeutic agents.

DIRECTOR OF LEAD DISCOVERY

The responsibilities of this individual will include supervising a team of biologists and biochemists in the development and running of new assays for drug discovery as well as conducting follow-up studies to elucidate mechanism of action. The successful candidate will hold a Ph.D. in chemistry or biochemistry and have a minimum 5 years of experience in all aspects of HTS including robotic screening and liquid handling systems, fluorescence-based detection systems, and data management. Demonstrated proficiency in the execution of screens of purified enzymes and receptors, as well as intact cells is required. Industry experience in assay development, HTS, and management is a must.

RESEARCH ASSOCIATES IN LEAD DISCOVERY

Scientists in this group will have a BS or MS degree with specialization in all aspects of HTS of enzymes, receptors, and cells. These scientists will focus on assay development, HTS, and follow-up mechanism of action studies. Ideal candidates will have demonstrated experience in assay design, automated liquid handing systems, fluorescence detection systems and data management. Industry experience preferred.

Compensation and benefits for these positions are comparable to industry standards.

Interested individuals should send curriculum vitae, statement of relevant background, and names of three references to: **Dr. Ross Stein, Director, Laboratory for Drug Discovery in Neurodegeneration, Partners Program in Neurodegenerative Diseases, Harvard Institutes of Medicine, Room 758, 77 Avenue Louis Pasteur, Boston, MA 02115; or E-mail as attachments to: rstein@rics.bwh.harvard.edu.**

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Harvard Medical School
Faculty Positions in Immunology
at the Dana-Farber Cancer Institute

Together with the Department of Pathology at Harvard Medical School, the Department of Cancer Immunology & AIDS seeks well-qualified (Ph.D., M.D./Ph.D. or M.D.) applicants for tenure-track positions at the Assistant or Associate Professor level. Applicants must have 3-5 years of postdoctoral experience, high quality peer-reviewed publications, evidence of independent research and competitive funding potential. The Department seeks individuals who have demonstrated the ability to direct innovative independent research in immunology using molecular and/or cellular approaches.

The positions offer significant scientific resources in a stimulating environment as well as an attractive start-up support package. Candidates are expected to participate in the teaching activities of the Harvard Medical School, Department of Pathology for medical students, graduate students and postdoctoral fellows. Applicants should submit, as soon as possible, curriculum vitae, bibliography, a brief statement of research interests and the name, address and phone number of four referees to:

Dr. Harvey Cantor
Chair, Search Committee
Dana-Farber Cancer Institute
44 Binney Street
Boston, MA 02115

DFCI and HMS are Equal Opportunity/Affirmative Action Employers.
Women and minorities are encouraged to apply.

GRANTS

RFA Announcement

ARA PARSEGHIAN MEDICAL RESEARCH FOUNDATION
A GOAL FOR LIFE

The Ara Parseghian Medical Research Foundation announces an unrestricted request for applications (RFA) directed toward understanding the cause and/or developing a treatment for Niemann-Pick Type C (NPC) disease. NPC is an autosomal recessive neurological storage disease. The gene responsible for NPC disease (NPC1) was isolated in 1997 and yeast, fly, worm, cat and mouse homologues have been identified. NPC1 mutant mice are available through Jackson Laboratories and human NPC1 and NPC2 mutant cell lines are available. Preliminary characterization of the NPC1 gene product suggests that it is a membrane-bound protein involved in vesicular trafficking of sterols, sphingolipids and other metabolites.

The Foundation will fund meritorious research proposals for up to a two-year period (renewable thereafter), at a maximum of $125,000/year, excluding salary support for the Principal Investigator. Investigators new to this field are encouraged to apply for funding. Targeted areas of emphasis include:

1. Cell Biology of the NPC1 and NPC2 proteins: Elucidation of the intracellular function(s) of the NPC1 and NPC2 proteins with particular emphasis on fully characterizing the role of these proteins in vesicular trafficking and intracellular signaling.

2. Neurobiology of NPC disease: Determination of the molecular pathogenesis of NPC disease in the CNS with particular emphasis on defining the function of the NPC1 and NPC2 proteins in the CNS.

3. Clinical trials and NPC disease: Identification of surrogate endpoints in NPC patients by non-invasive imaging, neurophysiological testing and/or genomics/proteomics approaches. Design of novel assays to screen for bioactive compounds that may prove therapeutically efficacious in NPC disease.

The application deadline is: October 1, 2001 with funding to begin January 1, 2002. For information and application forms, please contact: Ara Parseghian Medical Research Foundation, 1760 E. River Road, Suite 115, Tucson, AZ 85718. Telephone: 520-577-5106; FAX: 520-577-5212. **For complete information on grants administration, instructions and to download the grant application, visit our web site at www.parseghian.org.**

Mendel Biotechnology is seeking outstanding Scientists for key roles to expand the scope of our plant functional genomics program and develop applications of our discoveries.

Position One: **POSTDOCTORAL ASSOCIATE**. The successful candidate will have a Ph.D. in plant genetics or related fields. Experience in plant molecular biology is required, and some experience in histology is desirable. The project is an ambitious, large-scale genomics study funded by the Advanced Technology Program of NIST (Department of Commerce); **website: http://jazz.nist.gov/atpcf/prjbriefs/prjbrief.cfm?ProjectNumber=00-00-4084**.

Position Two: **STAFF SCIENTIST** or **POSTDOCTORAL ASSOCIATE**. The successful candidate will have a Ph.D. in plant biochemistry or related fields, expertise in plant secondary metabolism, and a good working knowledge of molecular biology. Experience with plant tissue culture techniques is desirable.

Please send your curriculum vitae and cover letter to: **e-mail: hr@mendelbio.com**. Regular mail should go to: **Human Resources, Mendel Biotechnology, 21375 Cabot Boulevard, Hayward, CA 94545**. Mendel Biotechnology (**website: http://www.mendelbio.com/**) is located in the San Francisco Bay area.

POSTDOCTORAL RESEARCH ASSOCIATE

Positions are available on an ongoing basis within different research groups in the Institute of Molecular Biology and the Institute of Neuroscience at the University of Oregon. The purpose of this notice is to establish and maintain a pool of qualified applicants. Ph.D. in molecular biology, neuroscience, or related fields is required. Please see our **websites: http://www.molbio.uoregon.edu** and **http://www.neuro.uoregon.edu** for information about the type of research being done. Salary dependent upon experience. For application materials, please **Telephone: 541-346-5151; e-mail: rita@prospero.uoregon.edu**. *The University of Oregon is an Equal Opportunity/Affirmative Action Institution committed to cultural diversity and compliance with the Americans With Disabilities Act. Women and minorities are encouraged to apply.*

A **POSTDOCTORAL POSITION** is available immediately to work on the production of rodent models with overexpression and/or underexpression of antioxidant enzymes or DNA repair proteins. Candidates should have a Ph.D. in molecular biology or related field. Experience with basic molecular biology techniques is essential; training in transgenic mouse procedures is desirable. Please send curriculum vitae, brief summary of research experience, and names of three references to: **Arlan Richardson, Ph.D., Director, Aging Research and Education Center, Department of Physiology (M/C 7756), The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78229-3900. E-mail: richardsona@uthscsa.edu**. *The University of Texas Health Science Center at San Antonio is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION
To Investigate the Role of p53 Mutations in Oncogenesis Using Microarray Technology

Applications are invited for a Postdoctoral position in a laboratory involved in understanding the molecular biology of the tumor suppressor p53. Individuals with expertise in recombinant DNA technology, real-time PCR, cDNA technology, and mammalian cell culture systems are encouraged to apply. Salary is negotiable. Send complete curriculum vitae and names of three references to: **Sumitra Deb, Ph.D., Professor, Massey Cancer Center and Department of Biochemistry and Molecular Biophysics, Virginia Commonwealth University, Medical College of Virginia Campus, Richmond, VA 23298. FAX: 804-827-1427; e-mail: sdeb@hsc.vcu.edu**.

POSITIONS OPEN

POSTDOCTORAL POSITIONS
APPLIED CARDIOVASCULAR BIOLOGY
Biomedical Engineering Program
The University of Arizona
Tucson, Arizona

Applications are invited for **RESEARCH ASSOCIATE** positions to join a multidisciplinary team evaluating tissue engineering of the cardiovascular system. Successful candidates will work on projects in one of the following areas: (1) cardiac physiology and heart failure, (2) extracellular matrix protein control of vascular cell function, (3) molecular regulation of vascular remodeling, (4) biomaterials and nanotechnology, and (5) functional genomic and proteomic studies of angiogenesis. A Ph.D. in the sciences and excellent communication and interpersonal skills are required. Send curriculum vitae including names of references to: **Dr. Stuart Williams, Biomedical Engineering Program, The University of Arizona, 1501 North Campbell Avenue, Mailstop Number 245084, Tucson, AZ 85724-5084. E-mail: skwill@u.arizona.edu.** Review of materials will begin August 2, 2001, and will continue until the positions are filled.

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

POSTDOCTORAL POSITION
in Developmental Neuroscience

A position is available to study the genetic basis of neuronal diversity and patterning in the vertebrate nervous system. We focus on the retina and the sensory ear epithelia in zebrafish. A combination of forward and reverse genetic approaches is used to identify factors involved in the specification, differentiation, and patterning of neurons. Among forward genetic strategies, we use morphological, immunohistochemical, and behavioral criteria to screen for mutant animals. This is followed by positional cloning (**Malicki, J.**, *Trends Neurosci.* **23**:531). Recently, this approach has greatly benefited from the zebrafish genome project. In reverse genetic analysis, we relay on a large-scale *in situ* screening of embronic expression patterns. The function of genes identified in these experiments is subsequently studied using several approaches including recent variants of antisense technology. Highly motivated individuals with a recent Ph.D. are invited to apply. Please send curriculum vitae, reprints, and names of three references to: **Dr. Jarema Malicki, Harvard Medical School/MEEI R513, 243 Charles Street, Boston, MA 02114. Website: http://www.howelaboratory.harvard.edu/malicki.htm**. *Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIPS

Michigan Society of Fellows Postdoctoral Fellowships program is offering three-year Fellowships at the University of Michigan to begin September 2002. Annual stipend will be $42,000. Application postal deadline: October 5, 2001. Information and applications are available online at **website: http://www.rackham.umich.edu/Faculty/society.html** or by writing: **Society of Fellows, 3030 Rackham Building, University of Michigan, 915 East Washington Street, Ann Arbor, MI 48109-1070. E-mail: society.of.fellows@umich.edu**. No e-mail applications accepted.

Janet S. Germiller
Michigan Society of Fellows
3030 Rackham Building
915 East Washington Street
Ann Arbor, MI 48109-1070
Telephone: 734-763-1259
E-mail: society.of.fellows@umich.edu
website: http://www.rackham.umich.edu/Faculty/society.html

POSITIONS OPEN

POSTDOCTORAL RESEARCH FELLOWSHIP POSITIONS
The Pulmonary–Critical Care Medicine Branch (P-CCMB), NHLBI

Postdoctoral Research Fellowship positions are available for individuals interested in cell and molecular biology as well as bench-to-bedside translational research. Basic research opportunities for Postdoctoral Fellowships exist within intramural P-CCMB laboratories investigating signal transduction, nitric oxide, G proteins, vesicular trafficking, cyclic nucleotide phosphodiesterases, and cytokine receptor shedding. Translational research opportunities also exist regarding genetic approaches to lung disorders including lymphangioleiomyomatosis, pulmonary fibrosis, cystic fibrosis, sarcoidosis, and asthma. Positions are available for a minimum of two years and may be extended for additional training. Candidates should possess a Ph.D. or M.D. degree or equivalent. Positions are available immediately. Interested individuals should submit a letter of interest, curriculum vitae, and three letters of recommendation to: **Joel Moss, M.D., Ph.D., Chief, Pulmonary–Critical Care Medicine Branch, NHLBI, NIH, Building 10, Room 6D03, MSC 1590, Bethesda, MD 20892-1590**. Inquiries can be directed via **e-mail: mossj@nhlbi.nih.gov**. *NIH is an Equal Employment Opportunity Employer.*

POSTDOCTORAL POSITION
DNA Repair Group
Lawrence Livermore National Laboratory (LLNL)

The main emphasis of this position is to define the contributions of the major abasic endonuclease of vertebrates by overexpressing selectively inactivating mutant proteins and creating a null cell line. Experience with mammalian cell culture is essential. Some experience in protein biochemistry and with computational tools a plus.

Start date flexible. LLNL is an interactive research laboratory located in the hills of the San Francisco Bay area, approximately 45 miles from the city's downtown. LLNL offers a challenging environment and competitive salary/benefits package. To be considered, please reference Department AJSC831BS and send curriculum vitae and three letters of recommendation to: **David M. Wilson III, Ph.D., Biology and Biotechnology Research Program, L-441, Lawrence Livermore National Laboratory, Livermore, CA 94551. E-mail: wilson61@llnl.gov**. LLNL is operated by the University of California for the National Nuclear Security Administration/Department of Energy. *We are proud to be an Equal Opportunity Employer with a commitment to workforce diversity.*

POSTDOCTORAL FELLOW/ RESEARCH ASSOCIATE

To identify proteins involved in signal transduction during malignant transformation and apoptosis of leukemia, breast, and prostate cancer. Strong background in protein chemistry purification and proteomics is desirable. Individual will interact with five Ph.D.s with strong background in molecular and cellular biology. Excellent salary commensurate with experience. Send résumé and names of three references to: **Andrew S. Kraft, M.D., University of Colorado Health Science Center, Chief, Division of Medical Oncology, 4200 East Ninth Avenue, B171, Denver, CO 80262. E-mail: siobhan.houston@uchsc.edu**.

POSTDOCTORAL POSITION
MOUSE GENETICS/GENOMICS

A position is available to study developmental mutations induced by region-directed ENU mutagenesis and/or haploinsufficiencies uncovered by induced chromosomal deletions. To inquire, send curriculum vitae to: **John Schimenti, Ph.D., The Jackson Laboratory, Bar Harbor, ME 04609. E-mail: jcs@jax.org; Telephone: 207-288-6402; website: http://www.jax.org/~jcs.**

Research Associates

PTC Therapeutics, Inc. applies its integrated RNA biology and chemistry proprietary drug-discovery platforms to identify small molecule drugs. PTC's technologies allow drug discovery programs to progress rapidly from gene sequencing to lead compounds by identifying small molecules that selectively bind to either RNA targets or proteins that interact with RNA. PTC's technology provides a general approach for all genetic-based diseases and the Company currently has drug discovery programs in oncology, infectious diseases, inflammation, and genetic disorders. PTC is well funded by premier investors and occupies a 30,000 sq.ft. custom-built research facility in South Plainfield, NJ.

Possessing a Bachelors/Masters degree in a scientific discipline with a minimum of two years research experience, Research Associates must have working knowledge of scientific experiments; the ability to conduct research experiments, make detailed observations, analyze data, and interpret results. The capacity to apply technical discretion in the design, execution and interpretation of experiments that contribute to project strategies is a plus. Research associates will be responsible for maintaining a laboratory notebook, maintaining familiarity with current scientific literature, and contributing to project process within his/her scientific discipline.

Qualified individuals should send a cover letter and resume to:

PTC Therapeutics, Inc.
Attention: Human Resources
Job Code SCI701
Corporate Court
South Plainfield, NJ 07080

Visit our web site at www.ptcbio.com. We strongly encourage electronic submissions, please address: careers@ptcbio.com.

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PHAGE DISPLAY
Molecular Biologist

We seek a highly motivated scientist to participate in an exciting program that involves both basic and applied research and is expected to lead ultimately to the discovery of innovative drugs for the treatment of neoplastic diseases.

The successful candidate will have a PhD in Molecular Biology, Biochemistry, or a related field and extensive experience using phage display technologies. At least 2 years of experience constructing, characterizing, and screening large phage libraries that display populations of mutated proteins is strongly preferred. Proven productivity both as an independent investigator and as a member of a dynamic, interactive team, as well as the ability to apply creative solutions to challenging questions while meeting aggressive goals and timelines are desired.

Please send/fax/email CV and letter to CORVAS International, Inc., 3030 Science Park Road, San Diego, CA 92121, Attn: HR; Fax: (858) 455-0457; Email: careers@corvas.com. EOE.

Visit our website at:
www.corvas.com

CORVAS INTERNATIONAL

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

POSTDOCTORAL POSITION IN NEUROBIOLOGY

A postdoctoral position is available to investigate the biological role of the recently cloned neuronal PDZ domain protein, NIL-16 (Kurschner & Yuzaki, J. Neurosci. 19:7770-7780, 1999), using knock-out mice, electrophysiology, molecular biology, and biochemical approaches. NIL-16 is uniquely bifunctional, serving both as a specific ion channel-binding molecule and as the neuron-specific precursor of the cytokine, interleukin 16. Therefore, NIL-16 represents the first molecular link between cytokine signaling and ion channel function. In addition, NIL-16 interacts with components of the endocytosis machinery. Therefore, NIL-16 may serve as an adaptor that regulates the turnover of bound ion channels, thereby contributing to synaptic plasticity.

The ideal candidate for this position is a trained electrophysiologist or neuroanatomist who wishes to receive comprehensive training in molecular and cellular biology and biochemistry.

St. Jude Children's Research Hospital has a highly interactive research environment and state-of-the-art facilities including core laboratories for proteonomics, microarray analysis of gene expression, transgenic/knock-out facilities, etc. Competitive stipends and a benefits package are offered. Interested candidates should send a curriculum vitae and the names of three references (postal and E-mail addresses and phone numbers) to:

Connie Kurschner, PhD • Dept. of Developmental Neurobiology
St. Jude Children's Research Hospital
332 N. Lauderdale • Memphis, TN 38105
e-mail: cornelia.kurschner@stjude.org

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Biotechnology

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Torrey Mesa Research Institute, (formerly Novartis Agricultural Discovery Institute, Inc.), a research institute of Syngenta Research & 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 are seeking the following qualified individual for a position available at the interface of pharmaceuticals/health care, nutrition and plant science:

Staff Scientist

Requires M.D. or Ph.D. in Immunology or Biochemistry with post-doctoral experience. Candidates should possess a strong background in veterinary or human infectious disease with expertise in molecular immunology and/or mucosal immunology. Opportunity to build a team with post-doctoral associates focused on novel preventative and therapeutic approaches to health care.
Job Code: SS/GHAN-SCI

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 resume including salary history and expectations to:
Torrey Mesa Research Institute, Attn: HR/(Job Code), 3115 Merryfield Row, San Diego, CA 92121-1102. Fax: (858) 812-1096. EOE

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ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Professorship in Conjunction with the Position of the Director of the Collegium Helveticum

Successful candidates will have an outstanding research and teaching record in a branch of science, engineering or the humanities, and are expected to be willing and able to establish the dialogue between different scientific cultures. The Collegium Helveticum is an institute for advanced studies where the exchange between the sciences and humanities is cultivated by interdisciplinary research and teaching - as well as international exchange. A close collaboration with the University of Zurich is desired and might be extended in the future by the foundation of a corresponding joint institute for advanced studies. Thus, ideal candidates would have a dynamic, engaging personality and management skills. A good command of the German language would be an asset, but is not a requirement.

Please submit your application with CV, publication list and further documents of interest **until October 15, 2001 to the President of the ETH Zurich, Prof. Dr. Olaf Kübler, ETH Zentrum, CH-8092 Zurich.**

Dr. Reddy's

RESEARCH FOUNDATION

Good People • Good Science • Good Medicines

Dr. Reddy's Research Foundation (DRF) is a leading pharmaceutical R&D company in India. We have three New Chemical Entities in clinical development and several promising candidates in our pipeline. We invite applications from suitable candidates for the following position(s) at our state-of-the-art research campus at Miyapur, Hyderabad, Andhra Pradesh, India.

SCIENTIST - BIOCHEMISTRY / IMMUNOLOGY

Job Profile : Responsible for development of biological assays to screen and profile potential drug candidates in the areas of diabetes, obesity and inflammation.

Skills : Practical experience in receptor biology, signal transduction, mammalian tissue culture and different biochemical techniques.

SCIENTIST - PHARMACOLOGY

Job Profile : Responsible for carrying out different in vitro and in vivo pharmacological studies of novel drug substances.

Skills : Practical experience in cardiovascular pharmacology, safety pharmacology, telemetric analysis, isolated organ studies etc. is required.

The successful candidate should have a Ph.D in Biochemistry / Biotechnology / Life Sciences / Pharmacology with 2 years of experience preferably in the pharmaceutical sector.

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For confidential consideration, please send resume indicating two references to :

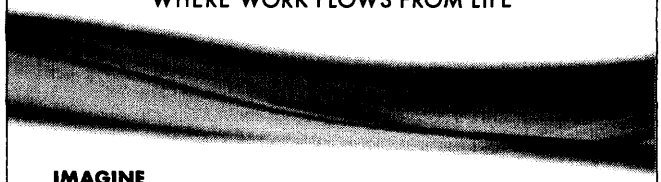
HRD Department
Dr. Reddy's Research Foundation
7-1-27, Ameerpet, Hyderabad - 500 016, A.P., India
Fax :91-40-3045438 / 3045007 Email: drfhrd@drreddys.com

Chairperson
Department of Phamacology and Toxicology

Michigan State University invites nominations/applications for the position of Chairperson, Department of Pharmacology and Toxicology. The position offers the exciting opportunity of hiring new faculty and directing one of this university's essential basic science departments. Extensive educational and research interactions are possible given the unique affiliation of the Department with the Colleges of Human, Osteopathic, and Veterinary Medicine, and the research funding opportunities provided by the Michigan Life Science Corridor Research Fund. Candidates must have a Ph.D. or other advanced degree with an outstanding record of research in pharmacology and/or toxicology and must be a nationally recognized leader in their field. It is anticipated that the successful candidate will maintain an active, extramurally funded research program. The Department has major research emphases in the areas of cardiovascular pharmacology, neuropharmacology, inflammation/immune modulation and toxicology; preference will be given to candidates demonstrating excellence in one of these areas. A strong interest in professional and graduate education and demonstrated leadership and administrative skills is essential. Applications should include a statement of interest in the position, a curriculum vitae, and names of three potential references (not to be contacted until approval is received from the applicant). Electronic applications are encouraged but paper materials also will be accepted. Applications should be sent to: **David I. Kaufman, DO, Chair of Search Committee, c/o Kimberly Betts, Office of the Dean, A309 East Fee Hall, Michigan State University, East Lansing, MI 48824 bettski@msu.edu**

The deadline for receipt of these materials is October 5, 2001. *MSU is an affirmative action/equal opportunity institution. Women and minorities are encouraged to apply. People with disabilities have the right to request and receive reasonable accommodation.*

WHERE WORK FLOWS FROM LIFE



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CALL FOR POSITIONS

Telethon Scientists

The Telethon Foundation, Italy, is seeking applicants in the field of genetic diseases for 10 positions at the following career levels:

7 positions of Assistant Telethon Scientists

Candidates must have finished post-doctoral training, or equivalent, and should be able to show good scientific productivity through their publication record in peer-reviewed international journals. They are also expected to carry out an independent research program.

2 positions of Associate Telethon Scientists

Applicants must have about 5 years of independent work experience and a strong publication record. They also must have started to establish an international reputation in their field of expertise and are expected to develop a vigorous and independent research program.

1 position of Telethon Scientist

Candidates must be highly productive scientists with the potential of further scientific growth. They must have a well established international reputation for scientific excellence and be recognized leaders in their field. They must have the proven ability to initiate, stimulate and conduct innovative research and to provide scientific leadership both nationally and internationally.

Each position will be awarded a five-year renewable contract and will be supported by a substantial research grant. There are no citizenship restrictions. Prearranged and formal agreement with Italian research institutes or Universities are mandatory for these positions. Three letters of recommendation that consider both research potential and general professional achievements are needed. Further information can be obtained from: **Fondazione Telethon**, Via Nino Bixio 30, 20129 Milan, Italy. Tel: +39 02 2022171, Fax: +39 02 20240688, email: telethon@telethon.it. For more details, please visit the following web-site address: **http://www.telethon.it/**

Closing date for applications is September 10, 2001.

ASSISTANT PROFESSOR OF BIOMEDICAL ENGINEERING (2 positions) University of Missouri-Columbia

Description: These are tenure-track faculty positions with a split teaching/research appointment. The successful candidates are expected to establish a strong interdisciplinary research program at the interface between engineering and life sciences. Research should address fundamental issues in biomedical engineering, which lead to new methods, products, processes, materials, or equipment for human and animal health. The candidates are expected to obtain external funding and collaborate with other research faculty in one or more divisions including Engineering; Agriculture, Food and Natural Resources; Medicine; Veterinary Medicine; Biological Sciences and Physics. The new faculty members will teach undergraduate- and graduate-level courses in biomedical engineering.

Qualifications: Applicants should have a Ph.D. degree in biomedical engineering, biological engineering or a field that supports biomedical engineering research. Candidates should have a strong background in both engineering and related life sciences. Education and ability to teach courses in biomedical engineering are necessary.

Closing Date: October 1, 2001 or until the positions are filled.

Application: Applicants should submit a detailed resume, a statement of research plan, a statement of teaching philosophy, degree transcripts, and a list of three professional references to: **Dr. Jinglu Tan, Professor & Chair, Dept. of Biological Engineering, 215 Ag Engr Bldg, University of Missouri, Columbia, MO 65211. Ph: (573) 882-2369; Fax: (573) 884-5650; Email:IrelandC@missouri.edu.**

The University of Missouri-Columbia is an Equal Opportunity/Affirmative Action employer. To request ADA accommodations, please contact our ADA Coordinator at (573) 884-7278, or adawww@showme.missouri.edu.

MAX PLANCK INSTITUTE FOR CHEMICAL ECOLOGY JENA, GERMANY

We invites applications for a

Research Greenhouse and Growth Chamber Facility Manager

to support research into plant-herbivore interactions. The manager will oversee the care of research plants and insect cultures, interact with the directors of the institute as well as all research and support staff, recruit and manage a team of gardeners and student helpers. Candidates must have a scientific training and be familiar with all aspects of horticulture, including basic plant biology, basic entomology, lighting technology, hydroponic, soil-less and soil-based plant growth, propagation, computer-based greenhouse control systems, environmental data archiving and the growth and regulation of transgeneic plants. Candidates must have an extensive knowledge of Integrated Pest Management principles and practices.

Candidates must be fluent in German and English since the institute is international in character, and have proven leadership skills. Candidates must, at times, be willing to work a flexible schedule. The position will be filled at a BAT IIa-III level depending on experience and qualifications. Disabled applicants possessing identical skills and experience will be given preferential treatment. Applications from women are particularly welcome.

Send applications to
Dr. Margrit Kluge, Max Planck Institute for Chemical Ecology, Carl-Zeiss-Promenade 10, 07745 Jena, Germany.
Website: www.ice.mpg.de

UNIVERSITY OF MANCHESTER
SCHOOL OF
BIOLOGICAL
SCIENCES

Lectureship in Genomics/Bioinformatics

Ref: 617/01

Bioinformatics, the interface between computer science and biology, is rapidly proving to be one of most exciting and fast moving areas in science. A real strength of the Manchester Bioinformatics team is the close collaboration between the Department of Computer Science and the School of Biological Sciences and the long history of successful joint projects between these two RAE grade 5 departments. The School of Biological Sciences is now seeking to enhance its work in this area through the appointment to this new lectureship.

The successful applicant will join one of the largest Biological Sciences Departments in Europe with a strong culture of collaboration and interdisciplinary interactions at all levels of research and teaching across a broad spectrum of Biological and Biomedical Sciences. We seek applicants working in any area of genomics or bioinformatics but preference will be given to those with a track record of successful research on the application of bioinformatics methods at the interface with genomics. The successful candidate will also be expected to contribute to postgraduate and undergraduate teaching in bioinformatics. The current bioinformatics staff and their research interests are described at *http://bioinf.man.ac.uk*

The appointment will be on the Lecturer scale £20,066 to £31,896 p.a. and is available for five years in the first instance. Information on the School, and an application form, can be found on *http://www.biomed.man.ac.uk*

Informal inquiries may be made to Professor A.M. Brass (Tel: 0161 275 5096; *Email: Andy.Brass@man.ac.uk*) or Professor Terri Attwood (Tel: 0161 275 5766; *Email: attwood@bioinf.man.ac.uk*).

Applications must be submitted to the address below.

Closing date: 7 September 2001.

Senior Post-Doctoral Research Associate in the UK

Neurobiology and Integrin Research

Ref: 599/01

A position is available to investigate the role of neurotrophins and integrins in the regulation of nerve regeneration in adult peripheral sensory neurones. This exciting project has particular relevance to neurodegenerative diseases such as diabetic neuropathies. The position is for three years and is available immediately, and would suit a gifted and committed cell/molecular biologist with up to three years' post-doctoral experience.

Informal enquiries can be addressed to Charles Streuli (*cstreuli@man.ac.uk*), Paul Fernyhough (*Paul.Fernyhough@man.ac.uk*) or David Tomlinson (*david.tomlinson@man.ac.uk*).

Closing date: 31 August 2001.

Application forms and further particulars are available from the Office of the Director of Personnel, The University of Manchester, Oxford Road, Manchester M13 9PL. Tel: 0161 275 2028; Fax: 0161 275 2221/2471; Minicom (for the hearing impaired): 0161 275 7889; *Email: Personnel@man.ac.uk; Web Site: http://www.man.ac.uk* Please quote relevant reference number.

As an Equal Opportunities Employer, the University welcomes applications from suitably qualified people from all sections of the community regardless of race, religion, gender or disability.

HELP SHAPE THE FUTURE OF THERAPEUTICS IN NEUROSCIENCE

National Institute of Neurological Disorders and Stroke

The National Institute of Neurological Disorders and Stroke, NIH, is seeking a Health Scientist Administrator to provide key leadership for institute-wide translational research programs focused on finding new treatments for disorders of the nervous system. Relevant experience includes drug discovery, assay development, design and use of chemical libraries/databases, gene therapy approaches, or other areas that have potential use in therapeutic development. The incumbent is affiliated with the NINDS Technology Development Program and works closely with the Anticonvulsant Screening Program, but also collaborates with and advises staff on therapeutic development in all areas of the Institute's research effort. The appointee provides guidance for neurotherapeutic development projects in the extramural research community through interactions with consultants, industry, and academic scientists.

This is a senior level, Title 42 (f) federal position. U.S. citizenship is required. Salary will be commensurate with experience. Applicants should have a Ph.D. or M.D., extensive leadership and project management experience, creativity in designing new therapeutic approaches, experience in neuroscience/pharmacology research, and a record of relevant publications. Familiarity with federal research grants/contracts is desirable. As a selective factor, applicants should have experience with therapeutic development. Applicants are **strongly encouraged** to obtain specific information concerning the knowledge, skills, and abilities needed for the position by contacting Mr. Arvelo at the address below.

Applicants should submit by **Oct. 15** a letter of application **(refer to Technology Development Program Title 42 vacancy)**, a description of how they meet the qualification criteria and selective factor above, a description of their relevant knowledge, skills, and abilities, a curriculum vitae, and a bibliography to: Mr. Luis Arvelo, NIH, NINDS Human Resources Branch, Building 31, Room 8A23, 31 Center Drive, MSC 2540, Bethesda MD 20892-2540; Tel (301) 435-6033; Fax (301) 480-0383; Email: la45j@nih.gov. For detailed information on duties, contact Dr. Robert Baughman, Tel (301) 496-1779; Email: rb175y@nih.gov.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

GLOBAL OPPORTUNITIES

Career Opportunities In Genomics and Proteomics Core Laboratories Academia Sinica, Taipei, Taiwan

Academia Sinica is establishing Genomics and Proteomics Core Laboratories, with immediate openings for highly trained managers and technical staff for

ENU Mouse Mutagenesis and Drug Discovery Program:

- Mouse veterinarian
- ENU mouse mutagenesis and physiological analysis
- Mouse pathology/histology
- Database setup and maintenance

Proteomics Program:

- 2D gel electrophoresis, manipulation and image analysis
- Mass spectrometry for automatic protein identification and sequencing
- Multidimensional capillary LC and chip-based techniques
- Proteomic bioinformatics

A Ph.D. degree or equivalent is required for the position of **managers**, and an MS degree needed for **staff scientists**. Candidate screening will begin on August 15, 2001, until positions are filled. Please send curriculum vitae, a letter of intent, and names of two references to: **Dr. Wei-Chen Lin for ENU mouse positions (weiclin@gate.sinica.edu.tw), Institute of Molecular Biology, or Dr. Kay-Hooi Khoo for proteomics positions (ppaf@gate.sinica.edu.tw), Institute of Biological Chemistry, Academia Sinica, Nankang, Taipei 115, Taiwan, http://www.sinica.edu.tw/~asgpp/index.htm**

Rapid Access to NCI Discovery Resources R*A*N*D Program

The National Cancer Institute is requesting applications for the following new initiative: Rapid Access to NCI Discovery Resources (R*A*N*D) program. The (R*A*N*D) program will make available to academic investigators, on a competitive basis, the discovery and early preclinical development contract resources of NCI's Developmental Therapeutics Program. The goal of R*A*N*D is to remove the most common barriers between basic research findings and their exploitation for discovery of new molecular entities. R*A*N*D does not fund grants; applications to the program are requests for NCI drug discovery and development resources to conduct specific tasks the applicants themselves are unable to carry out in their efforts to translate basic research findings to the discovery of new drugs and biologics. Examples of tasks that may be requested include: production/characterization of molecular target proteins; high-throughput screening (HTS) assay development; natural product isolation/characterization; synthesis of combinatorial libraries; early pharmacology and in vivo efficacy studies. R*A*N*D Program tasks will be distinct from the Rapid Access to Intervention Development (RAID) initiative. R*A*N*D will focus on lead discovery and optimization, whereas RAID will focus on later development after selection of a lead compound or construct.

The current deadline for receipt of applications is October 1, 2001; applications can be submitted April 1 and October 1 annually. A Letter of Interest (LOI) must be submitted via email to the Program Coordinator 30 days prior to the application deadline (September 1, 2001). Further information about this program, including detailed instructions for preparing proposals and LOIs can be found at **http://dtp.nci.nih.gov.** Telephone or email inquiries are encouraged and should be made to the Program Coordinator listed below: **(R*A*N*D) Program Coordinator, Executive Plaza North, Room 8022, 6130 Executive Blvd., Rockville, MD 20852, Tel: 301-496-8720, Fax: 301-402-0831, rand@dtpax2.ncifcrf.gov**

CONFERENCES

RAPID ACCESS TO PREVENTIVE INTERVENTION DEVELOPMENT – "RAPID"

National Cancer Institute

The National Cancer Institute announces the ongoing program: 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 expeditious 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 preclinical 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://cancer.gov/rapid.**

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, 2001. Applications should be submitted directly to the office listed below. Inquiries are encouraged, and the opportunity to clarify issues or questions is welcome. This notice has also been published in the NIH Guide. Please contact:

RAPID Program
Attn: Emilia A. Richichi, Ph.D.
Chemopreventive Agent Development Research Group
Division of Cancer Prevention, NCI
Executive Plaza North, Room 2117
6130 Executive Blvd., Rockville, MD 20852 (overnight mail)
9000 Rockville Pike, Bethesda, MD 20892 (regular mail)
Telephone: (301) 594-1165
Fax: (301) 402-0553
Email: richichi@mail.nih.gov

POSITIONS OPEN

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Vascular Biology
The University of Virginia

The University of Virginia offers a multidisciplinary program in vascular biology emphasizing physiology, pharmacology, biophysics, and cell biology of the vessel wall. Twenty-four Investigators are participants in a training program with a long history of successful mentoring of both graduate students and Postdoctoral Fellows. Our particular strengths are in the areas of biophysics, cell signaling, and microcirculation. Laboratory investigations are under way in cell-cell communication in microvessels, cardiac, smooth muscle and endothelial cell electrophysiology, smooth muscle cell signal transduction, and leukocyte-endothelial cell interactions. Interested and competitive applicants should apply to: **Dr. Brian Duling, Department of Molecular Physiology and Biological Physics, Box 449, Health Sciences Center, University of Virginia, Charlottesville, VA 22908.** *These positions are restricted to permanent residents or citizens of the United States. The University of Virginia is an Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS are available immediately to study the biochemistry of malaria parasites and to pursue antimalarial drug discovery. Principal projects will include the characterization of antimalarial drug targets and the biochemical and parasitological evaluation of potential antimalarial agents. A strong background in cell biology, biochemistry, and/or molecular parasitology is required. Please send curriculum vitae and three references (names, telephone numbers, and e-mail addresses) to: **Dr. Philip Rosenthal, Department of Medicine, Box 0811, University of California, San Francisco, CA 94143-0811. FAX: 415-648-8425; e-mail: rosnthl@itsa.ucsf.edu.** *The University undertakes Affirmative Action opportunity for underutilized minorities and women, persons with disabilities, Vietnam-era veterans, and special disabled veterans. UCSF is an Affirmative Action/Equal Opportunity Employment Employer.*

POSTDOCTORAL POSITION

A Postdoctoral position is available immediately to investigate the molecular and cellular aspects of inflammatory processes. Candidate should be experienced in molecular and cell biology, genetics, and physiology. The salary will be commensurate with experience and the appointment is for two years. Send curriculum vitae to: **Salome McFarlane, Boston University, 100 East Newton Street, G603B, Boston, MA 02188; Telephone: 617-638-4707; FAX: 617-638-8549; e-mail: sallymc@bu.edu.** *Boston University is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL/RESEARCH ASSISTANT POSITION available in Nitto Denko Technical, a company focused on development of novel biotechnology of gene carrier, protein chips, and medical diagnostic devices. Desired qualifications in areas of gene therapy/delivery, polymer chemistry, chemical engineering, membrane technology, microsensor technology, biomaterial interface, or surface interaction. Send résumé to: **Dr. Lei Yu, 401 Jones Road, Oceanside, CA 92054. E-mail: lyu@hydranautics.com; FAX: 760-901-2582.**

POSITIONS OPEN

BROWN UNIVERSITY
Postdoctoral Fellowships in Environmental Pathology

The Training Program in Environmental Pathology at Brown University invites applicants for Postdoctoral Research Fellowships. Research training is available in toxicology, cancer biology, and immunology. Candidates should have an M.D. or Ph.D. degree in biology or chemsitry. Commitment to a research career in environmental pathology is essential. *Must be U.S. citizens or permanent residents.* Salary is commensurate with NIH guidelines and experience.

Faculty mentors: **Jorge Albina** (inflammation and tissue repair), **Christine Biron** (immune responses to stress), **Kim Boekelheide** (reproductive toxicology), **Y. Eugene Chin** (Jak-STAT signaling pathway), **Suzanne M. de la Monte** (neurodegenerative diseases), **A. Ray Frackelton, Jr.** (Shc-signaling in breast cancer), **Douglas Hixson** (stem cells in carcinogenesis), **Agnes B. Kane** (carcinogenesis by mineral fibers), **Nancy Thompson** (molecular mechanisms of carcinogenesis), and **Anatoly Zhitkovich** (metal toxicology and carcinogenesis).

Applications containing a cover letter describing research interests, curriculum vitae, publications, and three letters of recommendation should be sent to: **Anatoly Zhitkovich, Ph.D., Department of Pathology and Laboratory Medicine, Brown University, Providence, RI 02912. Telephone: 401-863-2912; FAX: 401-863-9008; e-mail: anatoly_zhitkovich@brown.edu.** *Brown University is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH POSITION

Postdoctoral research positions are available in a NIH-funded laboratory to study basic signaling mechanisms underlying airway epithelial cell cytokine expression and smooth muscle proliferation. Ph.D. degree and strong training in biochemistry required. Experience in molecular biology (PCR, cloning, mutagenesis) is highly desirable. Send résumé and three letters of reference to: **Marc B. Hershenson, M.D., University of Chicago, Department of Pediatrics, 5841 South Maryland Avenue, MC 4064, Chicago, IL 60637-1470. E-mail: mhershen@midway.uchicago.edu.** *The University of Chicago and its Medical Center are Affirmative Action/Equal Opportunity Employers. Applications from women and minority groups are encouraged.*

POSTDOCTORAL POSITION available at the University of Pennsylvania School of Medicine to study membrane traffic as it relates to cell polarity and diseases such as autosomal dominant polycystic kidney disease (see *Molecular Biology of the Cell* **11**:4259, 2000). Experience in molecular biology, developmental biology (including transgenic mice), or biochemistry is preferred. Please send curriculum vitae and names of references to: **Josh Lipschutz, M.D., University of Pennsylvania School of Medicine, 700 Clinical Research Building, Philadelphia, PA 19104-6144 U.S.A. E-mail: jhlipsch@mail.med.upenn.edu.**

POSITIONS OPEN

BRAIN TUMOR IMMUNOLOGY

Postdoctoral openings: can start now. Basic and translational projects in immunotherapy for brain metastasizing breast cancer and other CNS tumors (rodent models). Experience with metastatic tumor, breast cancer, or cellular immunology helpful. Apply to: **Dr. L. Lampson, Neurosurgery, Harvard Medical School; e-mail: lalampson@mediaone.net.**

PRIZE

GREGORIO WEBER INTERNATIONAL PRIZE
Biological Fluorescence: 2002

The Gregorio Weber International Prize in Biological Fluorescence will be awarded for dissertation research in any areas pertaining to biological fluorescence. Applicants must have received the Doctoral (or equivalent) degree between 1998 and 2001. Applications for the Weber Prize 2002 must be received no later than Tuesday, December 4, 2001. Three finalists will be selected; the first-prize winner will be invited to present a lecture at an international symposium and will receive a $2,500 cash award. The two other finalists will receive honorable mention awards of $1,000 each. Further details concerning the award and submission procedures can be found at the Laboratory for Fluorescence Dynamics **website: http://lfd.uiuc.edu/weberprize/.** Please notify **William Mantulin; e-mail: lfd@uiuc.edu** of your intention to submit an application.

ANNOUNCEMENTS

RADCLIFFE INSTITUTE FELLOWSHIPS HARVARD UNIVERSITY

The Radcliffe Institute for Advanced Study awards about 40 fully funded Fellowships each year. Radcliffe Institute Fellowships are designed to support scholars, scientists, artists, and writers of exceptional promise and demonstrated accomplishment who wish to pursue independent work in academic and professional fields and in the creative arts. Applicants must have received their Doctorate or appropriate terminal degree at least two years prior to appointment (September 2002) or have achieved comparable professional achievement. Applications will be judged on the quality and significance of the proposed project and the applicant's record of accomplishment and promise. Women and men from across the United States and throughout the world, including developing countries, are encouraged to apply. The Institute is a scholarly community where individuals pursue advanced work across a wide range of academic disciplines, professions, or creative arts. Within this broad purpose, and in recognition of Radcliffe's historic contributions to the education of women and to the study of issues related to women, the Radcliffe Institute sustains a continuing commitment to the study of women, gender, and society.

The stipend amount is $45,000. Fellows receive office or studio space and access to libraries and other resources of Harvard University. Residence in the Boston area and participation in the Institute community are required during the Fellowship year, which extends from September 9, 2002, through June 9, 2003. Fellows are expected to present their work in progress at a public colloquium, performance, or exhibition, and to attend other Fellows' events.

For more information, visit our **website: http://www.radcliffe.edu.** Write, call, or e-mail for an application:

Application Office
34 Concord Avenue
Cambridge, MA 02138
Telephone: 617-496-1324
FAX: 617-495-8136
E-mail fellowships@radcliffe.edu

Applications must be postmarked by October 15, 2001.

POSITIONS OPEN

POSTDOCTORAL POSITION
Washington University

Postdoctoral positions are available in the Center for Cardiovascular Research to study molecular mechanisms of (1) intracellular cholesterol trafficking (*J. Biol. Chem.* **275**:38445-51) and (2) lipotoxicity (*J. Biol. Chem.* **276**:14890-5). M.D., Ph.D., or equivalent and a background in molecular and cellular biology required. Send curriculum vitae and names of three references to: **Dr. Daniel Ory, Center for Cardiovascular Research, Washington University School of Medicine, Box 8086, 660 South Euclid Avenue, St. Louis, MO 63110. FAX: 314-362-0186; e-mail: dory@imgate.wustl.edu.**

FELLOWSHIPS

FELLOWSHIP FOR THE STUDY OF FRESHWATER MICROSCOPIC INVERTEBRATES

The Academy of Natural Sciences of Philadelphia offers a unique opportunity for original **POSTDOCTORAL** research through the John J. and Anna H. Gallagher Fellowship for the Study of the Rarer Microscopic, Multicellular Invertebrate Animals with priority for the study of *Rotifera*. The rotifer collection at the Academy is now the largest of its kind in North America. A database of the Academy rotifer collection is available at **website: http://www.acnatsci.org**. The Gallagher Fellowship project must be based at the Academy, although field work and visits to other museum collections are encouraged. The scope of the project should be narrow enough to permit completion within 12 months. The research focus must be on systematics and may employ ecological, behavioral, molecular, or developmental tools. Applications should be received by 1 October 2001 for projects starting by January 2002. To apply, send curriculum vitae; statement of research interests; description of the project (including salary request, research costs, and time frame); and the names and contact information of three references to: **Gallagher Fellow Search, c/o Dr. Meredith Lane, Vice President, Biodiversity Research Group, Academy of Natural Sciences, Benjamin Franklin Parkway, Philadelphia, PA 19103.**

POSTGRADUATE FELLOWSHIP CONSERVATION EDUCATION

This position will support the Zoological Society of San Diego's conservation and research projects through community outreach and awareness programs. Experience teaching conservation education to a variety of age groups and cultures both locally and internationally is required. Qualified applicants must have the ability to monitor multiple conservation education projects and evaluate the success of those projects. Desirable experience includes curriculum development and hands-on conservation project coordination. Excellent computer skills are required as well as the ability to communicate professionally. A Bachelor's degree in biological sciences, environmental studies, or a related field is required. Applicant must be enrolled in a graduate degree program or possess a graduate degree. This is a two-year position with a possible extension of one year. This position will travel globally, spending significant time at offsite research areas. Foreign language experience is desirable. Stipends will begin at $32,700 with adjustments according to experience.

Send résumés to include curriculum vitae and names and addresses of three references to: **The Zoological Society of San Diego, Department of Human Resources (Education Fellowship Number 145019), P. O. Box 120551, San Diego, CA 92112-0551. Deadline: August 23, 2001. Website: http://www.sandiegozoo.org.** *Equal Opportunity Employer/Affirmative Action.*

POSITIONS OPEN

POSTDOCTORAL: The Emory University Division of Pulmonary/Critical Care Medicine seeks applicants to participate in the investigation of cellular and molecular mechanisms of vascular endothelial dysfunction. Solid skills in molecular biology, protein chemistry, or signal transduction required. Interested applicants should send curriculum vitae with names of three references to: **Dr. Mike Hart, Chief, Pulmonary Section, Atlanta VAMC, 1670 Clairmont Road (151–P), Atlanta, GA 30033.** *Emory University is an Equal Opportunity Employer.*

WORKSHOPS

BETA CELL BIOLOGY IN THE 21ST CENTURY: Engineering a Pathway to Greater Understanding NIDDK, NIH: November 26–28, 2001

The workshop will highlight current research relevant to the function and regulation of the complete signaling environment in the adult pancreatic beta cell. Topics to be discussed include insulin production and secretion, nutrient regulation of gene transcription, whole cell genomics and proteomics, animal models of beta cell function, and signaling networks within the pancreatic islet. Posters are welcome. For further information, **Telephone: 301-493-9674, Extension 104** or visit the meeting **website: http://www.betacellbiology.niddk.nih.gov**.

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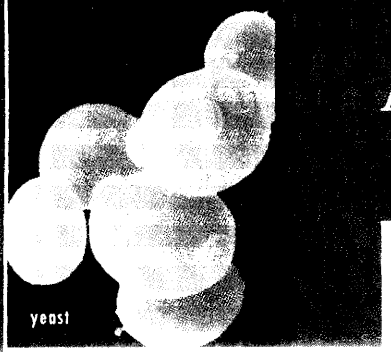

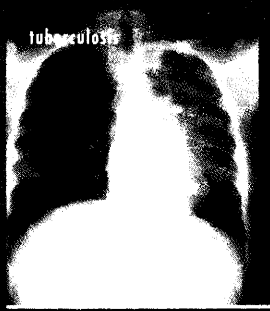

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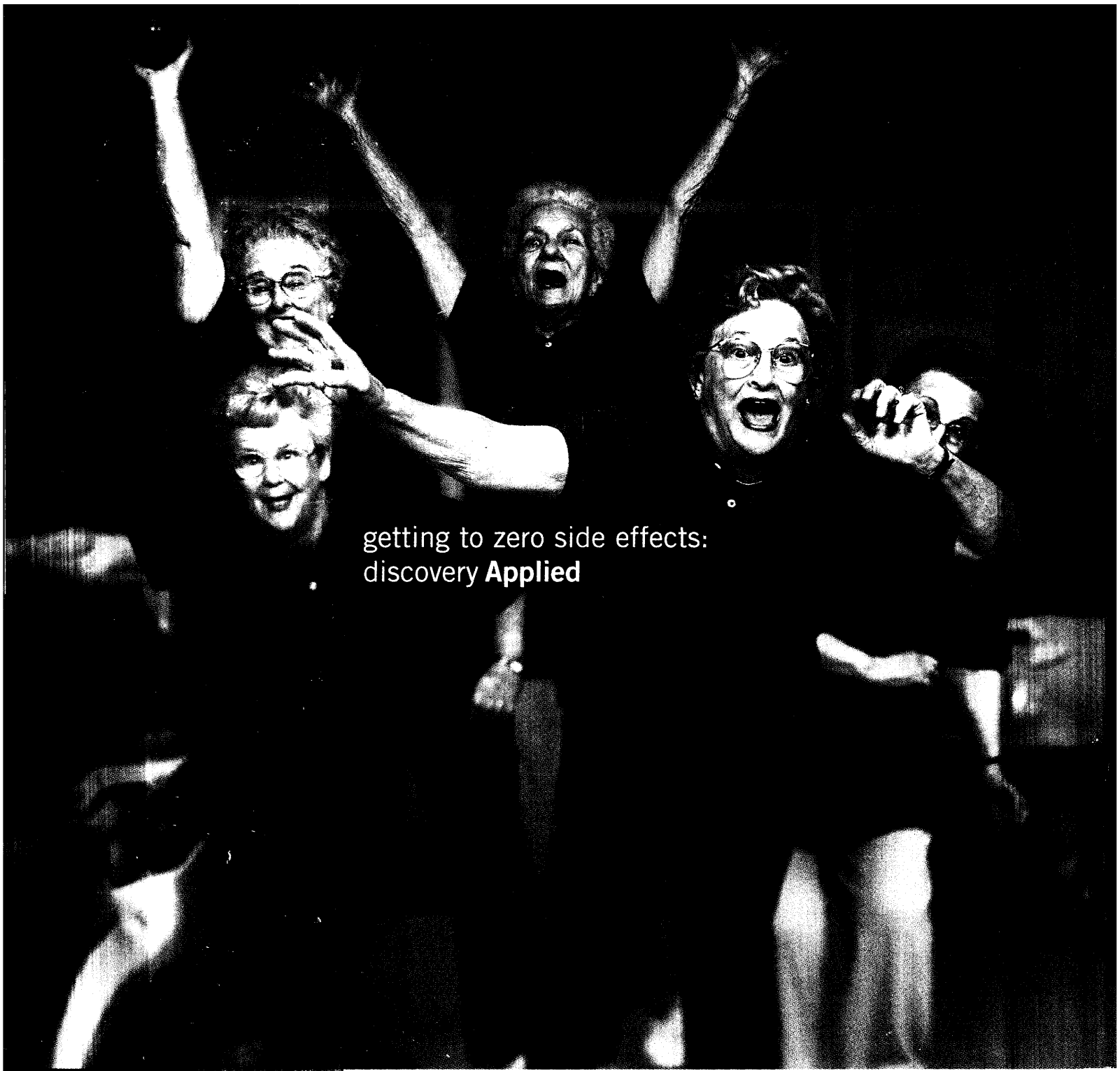

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