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The documentation that comes with MINITAB is well written and easy to understand. The software's widespread use for teaching statistics and quality management in schools and universities around the world is a testament to its utility. In summary, MINITAB is one of the most powerful yet easy-to-use data analysis software products on the market today. **—Satyam Priyadarshy**

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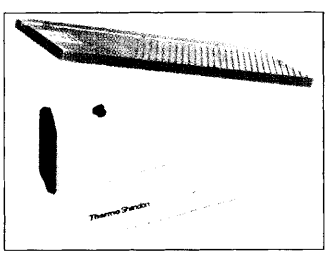

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CONTINUED ON PAGE 1914

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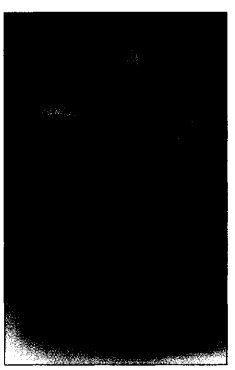

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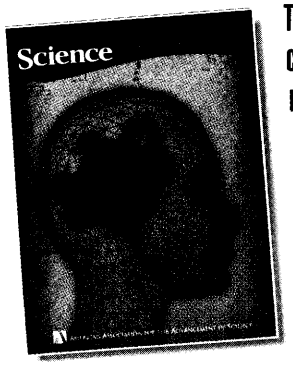

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To ensure that the most promising projects are undertaken, investigators must submit brief applications which are evaluated by a scientific advisory panel. At this time, only projects involving human, mouse, rat, dog or zebrafish and only projects with >10,000 genotypes will be considered. DNA samples must be in hand at the time of application. **There are no genotyping fees for approved projects**. Application deadlines are every six months.

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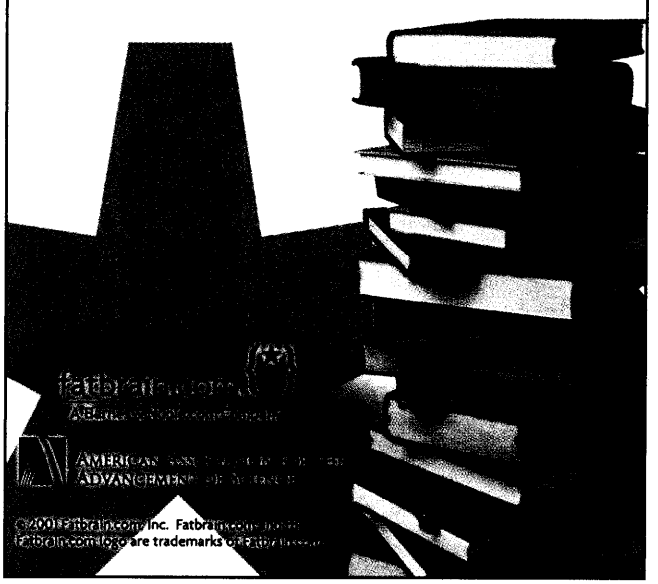

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Current research in life science would be almost impossible without the tools of information technology. New hardware and software simplify the tasks of collecting, archiving, and analyzing the complex data that experiments generate and permit investigators to make reliable comparisons among information stored in widely different formats.

BY PETER GWYNNE AND GARY HEEBNER

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LABORATORY TECHNOLOGY TRENDS:

Information Technology in the Life Sciences

SECTIONS:

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>>You arrive at the laboratory in the early morning expecting to find an important e-mail message from a colleague. But when you open it, the message contains only a senseless garble in which words run together without punctuation. Rather than trying to decipher the contents, you decide that it's easier to call your colleague and ask her to fax the message.

>>What caused the problem? A mismatch between two word processing programs might have been responsible. So might the failure of the sending and receiving e-mail servers to communicate properly. What is clear is that your e-mail system has welcomed you to the world of electronic incompatibility.

>>Scrambled e-mail messages represent only a minor hindrance to the work of the modern life science laboratory. Far more threatening is the issue of incompatible information. Experimental data today can exist in many varied formats and reside on several different platforms. "No one database or system can pull everything together," explains Mike Colvin, computational biology group leader in the Lawrence Livermore National Laboratory's biology and biological research program. The inability to convert information from one database into the format of another can make it impossible to compare the results of similar experiments in different laboratories that use different database technology. Since a major challenge for present-day life science researchers is to determine relationships between data in different formats and platforms, that inability looms as a significant roadblock to progress.

Exacerbating the problem is the sheer volume of information generated by academic and industrial biology labs. Genome sequencing and postgenomic efforts to delve into proteins and protein pathways have made life science an extraordinarily data-intensive pursuit. "Only high energy physics and perhaps astronomy generate as much data," says Burton Smith, chief scientist of **Cray, Inc.** Few experiments yield yes/no answers. Instead, researchers must mine deep into the information produced by individual experiments and series of runs to understand the implications of their work and to compare their results with those from other experiments in their own and other laboratories. "You can't do anything in the life sciences without generating a lot of information," says Robert Kehrer, partnership manager, worldwide developments for **Apple**.

ENTER INFORMATION TECHNOLOGY

This is the point at which life science encounters information technology (IT). "IT and computing will be essential to life science," says Colvin. "The life sciences are information science now." Jim Lindelien, CEO of **TimeLogic Corporation**, agrees. "IT and computer technologies are critical to the next advances in life science research," he says. "There seems to be a never-ending stream of demands on computing resources – through all genome applications and beyond that, into proteomics, and on up to the drug development part of the research pipeline."

Eli Mintz, president and cofounder of **Compugen**, expands on that thought. "Just as you can't do modern physics research without IT, you can't do life science research without it anymore. It would take humans forever to do the necessary calculations. New ways to analyze the data are becoming very basic to genomics and proteomics."

Computers have arrived in the life science lab with remarkable speed. "When I was a student in the mid 1980s," recalls Jeff Augen, director of strategy for **IBM Life Sciences**, "it was possible to complete an entire thesis project without ever using a computer. Today, if the computers are broken the research stops." In fact, he continues, "IT is the core value in the life sciences today. Without IT, nothing happens."

To make things happen, vendors now market several varieties of hardware, software, database technologies, and other computing accoutrements aimed specifically at the biology research market. The vendors aim to make computing accessible to life scientists who, while they may have more experience with IT than their predecessors in the lab, still lack the deep and detailed skills of computer scientists. "User friendliness is one aspect of what we do as tool developers and manufacturers," explains Mintz. "We expect that biologists will eventually understand what computer sciences can contribute to life science. But at present I'm not sure that their curriculum has caught up with the changes that IT has brought to biology."

Some software programs for data handling in the life science laboratory are very general in nature, used for routine spreadsheet and statistical calculations. Other forms of software and hardware are designed specifically for application to genomics, proteomics, and drug discovery. Several companies are also working on tools to improve the connectivity of data generated in different laboratories and with different software programs.

TWO ROLES FOR IT

According to Colvin of Lawrence Livermore, information technology has two main roles in life science. First comes the combination of data collection and archiving. That segment, he says, "is big and getting bigger." The numbers tell the

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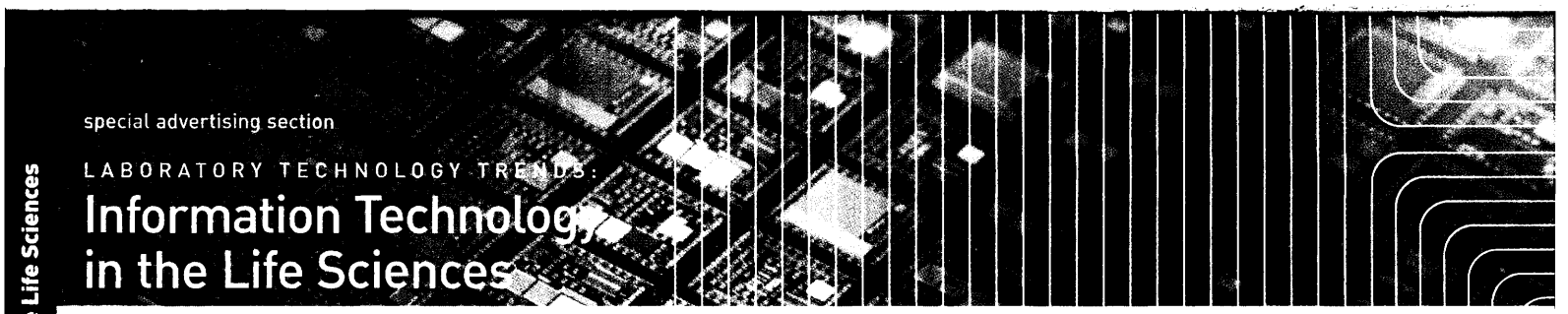

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tale. "If you store all the data coming off sequencing machines you have 300 terabytes," IBM's Augen points out. "Storing all the trace files for the human genome project would require 300 terabytes – an enormous expense. Some day we will sequence the genome of each individual. The costs associated with storing this data would be astronomical. Today, for financial reasons, **Celera** keeps approximately three terabytes of the original data." Postgenomic work promises to create even more information. "People doing mass spectrometry for protein sequencing are generating 250 gigabytes per day per machine," Augen continues. "Some companies are generating 20 terabytes per day."

Also growing in importance is the use of IT for quantitative simulations of biological processes, which range from modeling of chemical processes and of proteins all the way up to predictive modeling of cellular pathways and the effects of drugs on tissues. "Simulation exists primarily in research labs in academe and the national laboratories," says Colvin. "But a rapidly growing fraction of papers refers to a model. Life science is essentially following a curve taken by chemistry a decade ago. The challenge lies in the fact that the processes are much more complex."

Life science must also follow a curve taken by the computer industry. Two decades ago, the business relied largely on proprietary technology. Computers, operating systems, and databases from different vendors could not communicate with each other. But once industry leaders realized that this system limited customers' ability to use computers, and hence their demand for the industry's products, they started a movement toward openness. That goal remains elusive, as the example of incompatible e-mail illustrates. But the advent of operating systems such as Unix and Linux has permitted computers from different vendors to communicate understandably with each other.

COMPATIBILITY AND STANDARDS

In life science, the issue of compatibility focuses mainly on databases. Not only do different laboratories store their burgeoning biological information in different formats. The nature of the data also varies significantly from one database to the next. So does the reliability of stored information. Thus the IT industry is seeking appropriate responses. "There will be a place for communication tools that are interfaces to different types of data – a kind of toolkit for interfacing that will make the system transparent to individual life scientists," says Colvin. "There's also a need to ensure that the databases don't get polluted by less solid data. A lot of this, I think, will depend on an open-source, Linux-type approach."

Efforts have already started to develop standards for biological databases. The **Interoperable Informatics Infrastructure Consortium** (I3C), an organization headed by the **Biotechnology Industry Organization** (BIO), plans to create a standardized global language for the biotechnology and pharmaceutical industries. The consortium intends to help establish the types of biological information that databases can contain and to recommend a set of rules for searching, manipulating, and linking the data.

Another nonprofit organization, called **blueprint WORLDWIDE INC.** and founded by IBM and **MDS Proteomics**, has taken its own step to creating a standard. Last May it unveiled the world's first public Biomolecular Interaction Network Database (BIND) as a comprehensive source of protein interactions that trigger chemical reactions responsible for diseased or healthy cells in the body. "We're now involved in gathering funds to hire people to get data into BIND," says Francis Ouelette, director of the **Centre for Molecular Medicine and Therapeutics Bioinformatics Core Facility** in Vancouver, Canada, and blueprint WORLDWIDE's managing director designate.

THE ARRIVAL OF SUPERCOMPUTERS

The application of IT to life science starts with hardware. Several companies are now developing the hardware and operating systems required for storing and manipulating the vast amounts of data generated by researchers in the life sciences. They are also working to translate users' requirements into IT solutions in the laboratory.

As life scientists have collected more data of greater complexity, they have started to apply physical scientists' hardware of choice – supercomputers – to their analyses. These formidable tools, loosely defined as the most powerful class of computers available at any point in time on the basis of the number of floating point operations (FLOPs) they can perform each second, can solve large, complex problems that are too challenging for less powerful computers. Since the first Cray machine arrived in the mid 1970s, supercomputers have contributed enormously to the advance of knowledge and the quality of human life. They have created new materials. They have powered advances in electronics and visualization. And they have begun to unravel such mysteries as the shape of the universe.

Now, supercomputers face a fresh challenge. "So far they have not played a really big role in the life sciences," says Cray's Smith. "Most of the performance needs have been met by computer farms that can distribute the work to smaller machines. But that is changing. People are now interested in using supercomputers for sequence matching and searching problems. Various kinds of special purpose hardware have been built to pursue some of those tasks."

Cray recently provided an SV1 supercomputer to the **National Cancer Institute** for a genomic sequencing project. The machine, a parallel computer with a theoretical processing speed of 115 gigaFLOPS, has potential applications in protein folding, one of the most data-intensive problems in life science, and more. "It might be used to predict protein structures by going beyond

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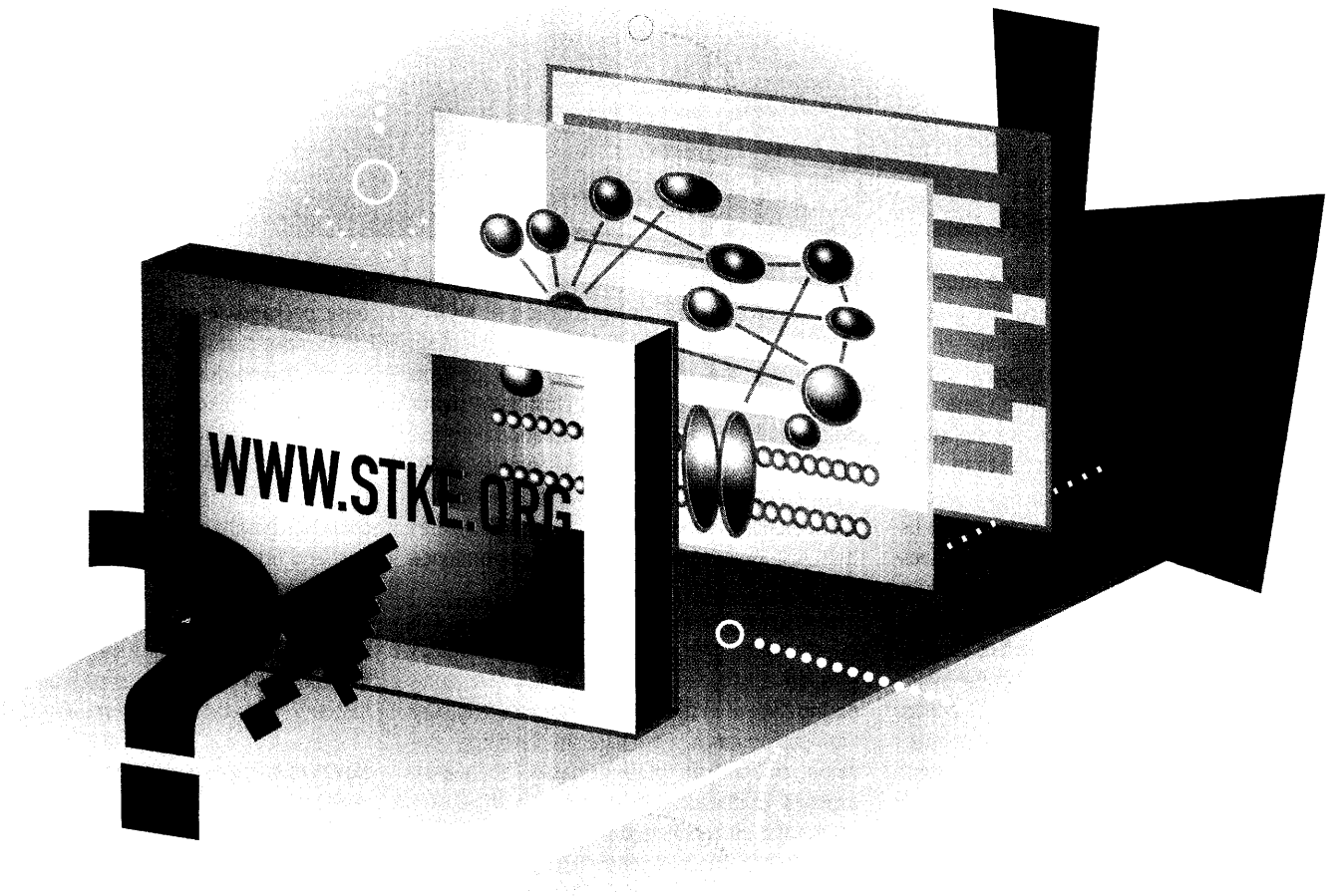

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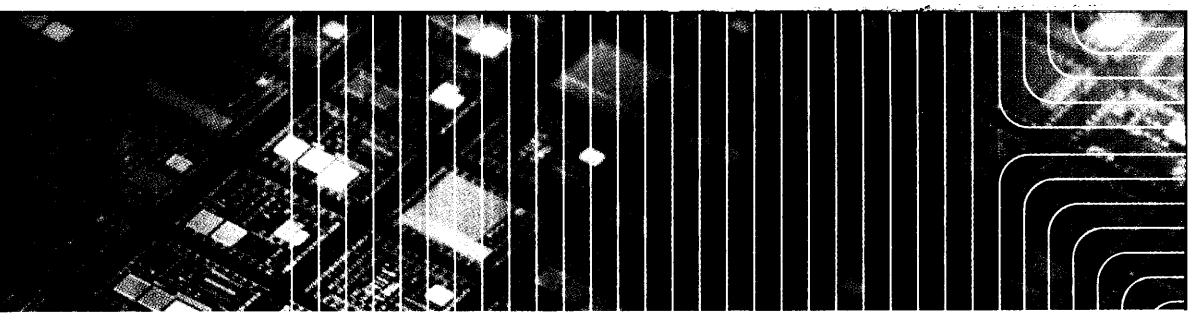


protein folding to getting the detailed structure of the docking site for a drug and the grosser structure of the protein," Smith explains.

IBM, meanwhile, is developing its own supercomputer for life science. Called Blue Gene, it is 500 times more powerful than the world's fastest machines and capable of more than one quadrillion floating point operations per second (one petaFLOP). "The Blue Gene project helps us learn about advanced computer architectures with self-healing characteristics – an absolute requirement for systems in the petaFLOP range," says Augen. "Protein folding is a perfect application for such a system. Our computational biology research center has around 80 to 90 scientists with backgrounds in nuclear magnetic resonance, X-ray crystallography, and the general application of computer science to the life sciences."

BEYOND THE HARDWARE

Other prominent computer manufacturers, including Apple, **Compaq**, and **Sun Microsystems**, have started to develop instrumentation that will help the life science community to manage its information overload. Like IBM, Apple has formed a separate division to focus on developing tools and technologies that will improve life science researchers' productivity and data analysis.

The efforts go beyond new hardware. Apple, for example, has developed the Mac OS X operating system for life science researchers. This industrial strength system provides the multitasking, memory-protected environment needed for scientific exploration while retaining the ease of use that scientists require to be productive. Mac OS X delivers an intuitive and visually stunning interface. It also allows users to access Unix commands through a terminal window. "Life scientists have typically had two machines on their desks – a powerful Unix machine and a PC," says Richard Kerris, Apple's director of development technologies. "Now for the first time they have been able to combine those needs in one machine. The life science community is very Mac favorable because a lot of the familiar tools such as scripting languages from Unix are starting to pop up on OS X. And our Macs can talk to supercomputers as effectively as any other Unix box."

Like other vendors, Apple also works on the interface between hardware and software. For example, it has enabled TurboBLAST from **TurboGenomics**. This software is a cross-platform, accelerated, parallel implementation of **NCBI**'s BLAST application. TurboBLAST allows scientists to harness the idle cycles of their desktop machines or to use dedicated clusters to create an affordable in-house BLAST solution with the power to handle even the most complex tasks. By leveraging the power of **Motorola**'s G3 and G4 processors and Apple's Mac OS X, TurboBLAST delivers supercomputer performance at a fraction of the cost.

TimeLogic, meanwhile, aims to help life scientists make the most of their IT resources through a process called reconfigurable computing. "We're in the business of producing very high-performance hardware to leverage the value of critical bioinformatics software," explains Lindelien. "We introduce a hardware accelerator into conventional servers and choose to accelerate those algorithms that create bottlenecks or are too costly for the organization to solve in a reasonable amount of time. We get more bioinformatics analysis capacity at one-tenth to one-hundredth the cost of adding additional central processor units to a server farm."

SIMPLE STATISTICAL ANALYSIS

While hardware provides the computing power, software gives life scientists the opportunity to tailor information technology to their needs. Those needs range from the general – word processing, spreadsheets, and statistical analysis, for example – to the highly specific, among them interpreting DNA sequencing in genomic research and carrying out molecular modeling in drug discovery.

The general programs exemplify the increase in sophistication of life science experiments. "The old saying – if you need to analyze your results you've done the wrong experiments – still holds in some situations," says Harvey Motulsky, president of **GraphPad Software**. "But with many experimental systems statistical analysis is essential."

Even routine statistical analysis can take several hours to perform in the absence of a computer. The everyday calculations are fairly tedious and mistakes can be difficult to find and correct. Several companies have developed user-friendly programs that simplify this work. **SAS Institute**, among other firms, has programs for basic calculations as well as scientific graphing and curve-fitting. The software ranges from basic packages to complete families of products.

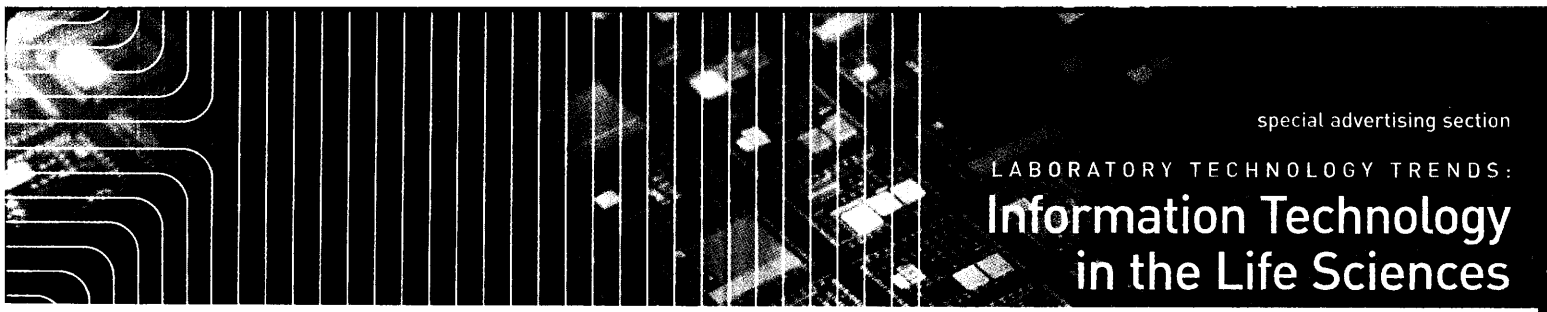
To make statistical calculations accessible to scientists who don't need a heavy duty statistical analysis product, GraphPad has created InStat, designed for any scientist to master in a few minutes. The company has also created a larger program, Prism, that combines making scientific graphs, doing basic laboratory statistics, and fitting curves. Unlike other data analysis programs, says Motulsky. "Graph doesn't assume you already know a lot about statistics. Not only are the programs easy to learn and use, but they also guide you to pick an appropriate test and help you interpret the results."

SOFTWARE FOR SEQUENCING...

The software demands of simple statistics pale against those of major projects such as sequencing the genomes of humans and other organisms. The generation of vast amounts of scientific data in these efforts has driven the formation and fueled the growth of bioinformatics, the field that focuses on drawing rational conclusions from information too voluminous and too scattered to be analyzed by a single scientist or research team.

A growing number of companies offers software for analyzing DNA sequences and protein structures. These products and services often include access to proprietary databases with large volumes of sequence data. Some systems can be accessed through the Internet, a route that allows researchers to manipulate large data sets without having to make extensive investments in PC hardware. Others reside in the user's facility, offering greater security. Companies that offer suites of bioinformatics programs include **Biomax Informatics AG**, **Entigen**, and **InforMax**.

Europe has a strong presence in this market. One of the newest organizations to emerge in bioinformatics is German firm **Axaron Bioscience.** Founded last November in a joint venture between **BASF** and **LYNX Bioscience AG**, the company specializes in functional genomics. It integrates scientific expertise and technological know-how in functional genomics to provide solutions that increase the quality of life. Other European firms that have become major providers of software and services in the bioinformatics area include the **European Bioinformatics Institute**, **GeneBio**, **Genomatix Software**, and **LION Bioscience**.



Information Technology in the Life Sciences

In the United States, Compugen has pioneered computational applications in genomics and proteomics. "Our expertise is in data mining," says Mintz. "We have developed the tools to analyze data currently available – mostly sequence data." Compugen's approach combines mathematics and computer science with molecular biology to improve the understanding of genomics and proteomics. "We have designed a set of algorithms, the leads platform, that can handle data and databases of all the genes," Mintz explains. "We analyze them using a complex modeling phenomenon that models, say, alternative splicing, contaminations, and other artifacts."

Mintz emphasizes the dangers of oversimplification in analyzing the results of genomics experiments. "If you oversimplify you don't get good results," he explains. "We have made sure that we don't oversimplify."

...AND FOR PROTEOMICS

Proteomics presents problems of analysis even greater than those encountered in genomics. In response, new software has emerged for analyzing peptide sequences and two-dimensional and three-dimensional protein structures. Protein identification and characterization typically involve the use of two-dimensional gel electrophoresis and mass spectrometry.

"Our V3 is a breakthrough technology that can compare two-dimensional gels and find the spots and the differences between different gels," says Mintz. "The advance involved the exact alignment of two gels. It will give 2-D gels a new push. You would invest in it if you have a lot of 2-D gel work."

Several other companies, among them **Amersham Biosciences**, **Applied Biosystems**, **Bio-Rad Laboratories**, and **Sigma-Aldrich**, have developed families of instruments, reagents, and software for proteomics research. Some vendors offer software for protein analysis along with their mass spectrometers. "Without networked computing technology and sophisticated informatics software, most high throughput techniques that involve mass spectrometirc detection would be unworkable or commercially unviable," says Mark McDowell, marketing director for **Micromass UK.** "The number of spectra of merit recorded in a typical proteomic analysis is so large that it becomes prohibitively expensive to interpret them manually."

Micromass, which develops mass spectrometers (MS) and MS software, has partnered with other firms to provide integrated solutions for proteomics research. It has, for instance, worked with Bio-Rad to produce the Bio-Rad ProteomeWorks System. "We realized about 10 years ago, when many MS platforms were running on relatively expensive minicomputer platforms, that the way to go was knowledge generation with PCs," McDowell recalls. "Our novel Mass-Informatics strategy was to change the concept of computing in mass spectrometry. Traditional data systems simply recorded, stored, and displayed limited volumes of MS data. Our approach is founded on the automated interpretation of high resolution MS data – turning samples into knowledge and not just spectra. We asked protein scientists to describe their challenges and priorities so we could translate them into 'high level MS language.' As a result we have developed an accessible interface to the power of mass spectrometry, enabling life scientists to rapidly map the protein landscape."

Other companies are developing proteomics software programs for their own in-house use. Several will partner with other organizations or will license their software to others. Such companies as **GeneProt**, MDS Proteomics, and **Oxford GlycoSciences** are taking this approach.

THE CHEMISTS' PERSPECTIVE

The biological form of informatics isn't the only one to rely intensely on IT. Chemists working in high throughput screening and similar applications would struggle to categorize, archive, track, and locate the large numbers of compounds they need for their work in the absence of software products from companies such as **MDL Information Systems** and **Tripos** that specialize in IT for cheminformatics. These programs feature such capabilities as chemical structure searching and information integration. They permit a scientist to work with many attributes of chemical compounds even if they exist in different formats.

CambridgeSoft Corporation has a strong position in this area as a supplier of software, solutions, and services based on Internet browsers and web servers for chemistry. "We have a very broad array of tools from desktop to enterprise for the work processes of our customers," says vice president of research and development Michael Rubenstein. "The workflow of organizations has evolved in such a way that they all need to share data and communicate. In addition, the work flows across scientific disciplines. Our role is to facilitate the information sharing."

The need for sharing is particularly evident in large organizations. "They have difficulties with deployment of software that limit their ability to incorporate new technologies," says Rubenstein. "That's particularly true when products have to be installed across all the desktops in the organization. Those problems are getting bigger as corporations sign up for research collaborations."

CambridgeSoft's ChemOffice WebServer is an enterprise implementation of ChemOffice that facilitates applications based on browsers and web servers. "In terms of internal structure our business has two significant foci: desktop tools and enterprise solutions," says Rubenstein. "Today we see a much greater emphasis on enterprise solutions. Even academic laboratories have them." The ChemOffice suite includes the ChemDraw program used by many chemists.

A NEW PARADIGM

IT's increasing influence on life science promises most benefit to drug discovery. Early efforts in this field involved the slow, labor intensive process of screening natural products derived from plants and microorganisms and testing them for activity in animal models. The past decade's advances in molecular biology, genomics, automation, detection, and informatics have created a new paradigm. The fresh approach to drug discovery and drug design relies heavily on computational power, and shifts the scientist's efforts from basic laboratory research to virtual research *in silico*. In particular, the approach uses 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.

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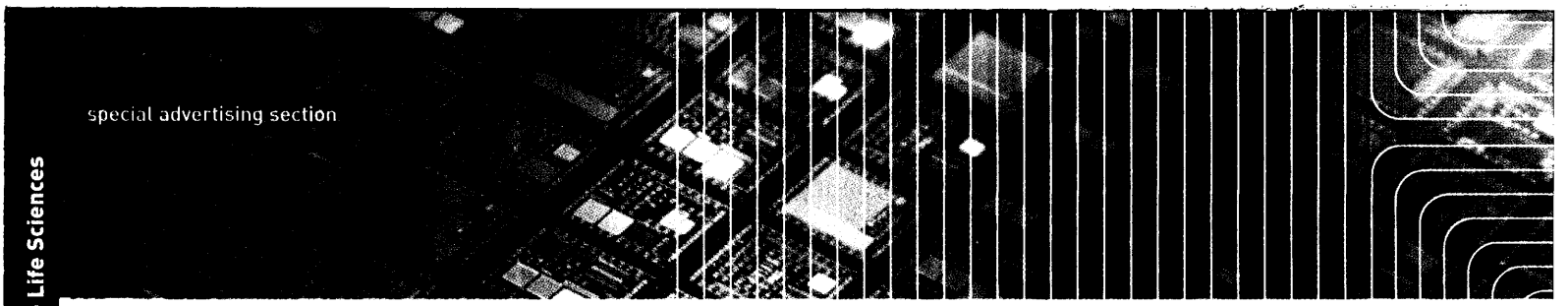

Molecular modeling uses sophisticated computer programs that determine the structures and properties of molecules of interest and then intelligently analyze the data to predict the structure of an ideal drug candidate. This is no simple feat because the data that characterize molecules can exist in many formats. Carrying out that type of analysis demands extremely fast and powerful computers. **Accelrys** and **HyperCube**, among other firms, have developed software programs for molecular modeling.

Computational chemistry has also changed drug discovery. Chemists can now spend as much time at the computer as the lab bench. They use the PC to explore possible molecular configurations for their potential drug candidates. The use of programs to predict and design molecules saves the time and expense of actually screening a huge library of compounds for activity against a target. Accelrys, **CAChe**, and Tripos have developed computer programs to help chemists design synthetic molecules likely to have the desired biological properties while minimizing the risks of adverse effects such as toxicity.

IDENTIFYING DRUG TARGETS

Biotechnology firm **CuraGen Corporation** illustrates the potential value of an informatics based approach in drug discovery. It has established programs to identify and validate novel drug targets based on knowledge of the human genome. "We have focused on understanding cell biology, the gene, how genes code for proteins, and how proteins interact with other proteins," says John Murphy, vice president and chief information officer. "With that understanding we can better engineer specific drugs and therapies that can be used for pinpoint cures rather than the historical broad approach to healing."

The company identifies novel, pharmaceutically relevant genes and proteins and associates them with specific diseases using biological methods that include hypothesis-driven disease models, drug response models, gene and pathway mining approaches, and human genetics. Once associated with diseases, the genes and proteins are validated as targets through cellular assays and animal model systems.

To manage the information that results from these efforts, scientists use CuraGen's GeneScape operating portal. This consists of bioinformatics tools and databases that have been designed specifically to manage, organize, and analyze vast amounts of biological information. "The portal permits us to tie the entire world, rather than a single journal at a time, to the scientist," says Becky Horton, CuraGen's marketing manager. "We use both public and private databases. Scientists now have at their fingertips a much better platform to do their research, get references, and collect the best information on what they're trying to study."

The company has signed collaborative agreements to apply its technology. It has established strategic alliances with **Abgenix** to develop antibody therapeutics to treat an array of diseases and with **Bayer AG** to develop and commercialize small molecule therapeutics for treating obesity and diabetes.

In the past few years, biologists in both the academic and business worlds have generated huge archives in their hunt for the fundamental causes of disease. Because hundreds of labs around the world, each with different computer systems and ways of recording and storing the data, generate that information, it often comes across like the garbled e-mail message: in a form that scientific teams other than the one which produced it find difficult or impossible to understand. Plainly, continued progress of modern drug discovery at its current breakneck speed will depend on standardization of data and the format in which it is stored.

The I3C, with its plans to create a standardized global language for the biotechnology and pharmaceutical industries, represents one avenue toward that goal. All new software would follow the rules and old databases would be updated to the new specifications. Nearly 35 academic, corporate, and government organizations have taken part in discussions about the project. IBM, Sun Microsystems, and the National Cancer Institute are among the most prominent.

The BIND network database under development by blueprint WORLDWIDE takes a narrower approach to standardizing data. Based on a model created by Christopher Hogue of the **University of Toronto's Samuel Lunenfeld Research Institute**, it is a "living database" of bioinformatic and biomedical data intended to help the global science community move toward a complete description of the ways in which molecules interact and control cellular life. "The database currently exists at www.bind.ca and is usable with 6,000 records," says blueprint's Ouelette. "That's just a small fraction of the tens, if not hundreds, of thousands of records we hope to have in the future." The organization is filling the database with information in publicly available databases and data submitted directly by scientists.

THE EUROPEAN EXAMPLE

The research directorate-general of the European Commission (EC) has started its own efforts to help standardize databases relevant to life science. "Virtually every euro spent through our Framework program in bioinformatics goes to support standardization and linking data," says Carlos Martinez-Riera, principal scientific officer at the EC's directorate for health research headed by Manuel Hallen. Plans include the development and connection, through a new software layer, of a macromolecular database; a protein-protein interaction database; and a microarray gene expression database, a €19.4 million ($17 million) project led by the European Bioinformatics Institute in the U.K. In addition, says Martinez-Riera's colleague Philippe Cupers, "We have a project coordinated by Per Roland of Sweden's **Karolinska Institute** that proposes a database generator for 3-D images of the brain, working on raw data from PET and FMRI scanners all over Europe."

Another EC group reverses the usual relationship between IT and life science. "We're looking to see what innovations we can introduce to IT from life science," says Simon Bensasson, head of the EC's future and emerging technologies unit. "We have launched initiatives on neuroinformatics – artifacts that live and grow – and autonomous sensing robots. These projects involve biologists, computer scientists, and engineers."

In the more conventional direction, computer hardware firms and software companies are working with biological researchers and with each other to provide the best possible IT support for the life science industry. Biologists worldwide can expect to experience significant advances and powerful new IT tools in the near future.

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

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POSITIONS OPEN

TENURE-TRACK ASSISTANT/ ASSOCIATE PROFESSOR
Department of Pharmaceutical Sciences
University of Oklahoma Health Sciences Center
College of Pharmacy

The Department of Pharmaceutical Sciences in the College of Pharmacy (**website: http://www.pharmacy.ouhsc.edu**) invites applications for a tenure-track faculty position at the Assistant or Associate Professor level. The successful candidate should have current training in molecular aspects of pharmaceutical sciences. Areas of special emphasis include medicinal chemistry (molecular mechanisms of disease states, new antimicrobial targets, nuclear pharmacy); pharmaceutics (drug delivery systems, drug analysis, pharmacokinetics); pharmacology (cancer therapeutic targets, pharmacogenomics, neuropharmacology); and toxicology (neurotoxicology, oxidative stress, toxicogenomics, carcinogenesis). Applicants must possess a Ph.D. degree and have postdoctoral experience. A background in pharmacy is desirable but not essential. Candidates should have a strong record of research activity demonstrated through publications and success in obtaining research funding if applying at the Associate Professor level. It is expected that the successful candidate will develop and maintain a strong, independent research program with external grant support and participate in the teaching of the pharmaceutical sciences, especially in pharmacology. The Department of Pharmaceutical Sciences offers first-class laboratory space and competitive start-up packages. For fullest consideration, applications should be received by April 7, 2002, but the search will continue until the position is filled. Applications would include a letter describing current and proposed research activities, current curriculum vitae, and up to three peer-reviewed papers. Three letters of recommendation should also be sent independently. All materials should be mailed or e-mailed to: **Dr. Gordon P. Sachdev, Chair, Search Committee, Department of Pharmaceutical Sciences, College of Pharmacy, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190. FAX: 405-271-7505; e-mail: gordon-sachdev@ouhsc.edu.** *The University of Oklahoma is an Affirmative Action/Equal Opportunity Employer. Women and minorities are strongly encouraged to apply.*

The College of Pharmacy at the University of Nebraska Medical Center (UNMC) seeks two candidates for tenure-track positions in the Department of Pharmaceutical Sciences. The first position is for a candidate with strong background in drug metabolism/pharmacogenomics and the second is for a candidate with a strong background in medicinal polypeptide/protein chemistry/protonomics. Both positions are at the **ASSISTANT PROFESSOR** level; however, all levels of appointment will be considered. This is a dynamic, rapidly growing department with research strengths in drug delivery, cancer, diabetes, and ocular therapeutics. A Ph.D. degree or equivalent is required. The candidate will be expected to establish a strong, funded research program; develop multidisciplinary collaborations; and to teach in both professional and graduate programs. Applications will be accepted until the position is filled. Applicants should send curriculum vitae, names of five references, and a summary or research plans to: **Chairman, Faculty Search Committee, 986025 Nebraska Medical Center, Omaha, NE 68198-6025.** *Women and minorities are especially urged to apply.*

TENURE-TRACK ASSISTANT/ ASSOCIATE PROFESSOR

Applications are solicited from candidates with a funded research program (cell/developmental biology or neuroscience preferred) and willingness to eventually teach head and neck anatomy. Send curriculum vitae, research synopsis, teaching synopsis, and contact information for three references to: **Dr. Lee Robertson, Department of Biological Structure and Function, Oregon Health and Sciences University, 611 S.W. Campus Drive, Portland, OR 97201.**

POSITIONS OPEN

FACULTY POSITIONS
Department of Otolaryngology
University of Michigan

ASSISTANT- OR ASSOCIATE-LEVEL POSITIONS are available in the following areas: (1) Functional aspects of hearing studied at the CNS and/or perceptual level. An emphasis on speech perception is preferable but not essential. (2) Molecular biology or genetics of inner ear development or membrane receptor biology. (3) Basic cellular and molecular research in various aspects of head and neck oncology.

Candidates for either of the first two research areas will join the Kresge Hearing Research Institute, a unit of otolaryngology that comprises 16 basic science and clinical Principal Investigators. In this collegial environment, hearing research interests span a broad range from molecular genetics to psychophysics. Cancer Investigators will join the multidisciplinary Head and Neck Oncology Program of the Cancer Center, made up of Investigators from six departments in three schools. The appointments are research positions with the possibility of joint appointments in basic science departments and participation in graduate teaching. Training grants aid in support of Ph.D. students, postdoctorals, and residents. Ph.D. students are affiliated with the U-M Graduate Program in the Biological Sciences including the Neuroscience program, the Cellular and Molecular Biology program, the Cancer Biology program, and other departments.

Please send curriculum vitae and summary of research interests and have three letters of recommendation sent to: **Dr. John C. Middlebrooks, Search Committee Chair, KHRI, University of Michigan, 1301 East Ann Street, Ann Arbor, MI 48109-0506. E-mail: jmidd@umich.edu.** *The University of Michigan is an Equal Opportunity Employer and welcomes applications from all qualified candidates.*

FACULTY OF MEDICINE
Department of Physiology
University of Manitoba

The Department of Physiology, Faculty of Medicine, University of Manitoba, invites applications for two full-time contingent faculty positions at the level of **ASSISTANT PROFESSOR** in the Institute of Cardiovascular Sciences. Applicants should have an M.D. or Ph.D. degree in any of the medical sciences with two to three years of postdoctoral experience in molecular biology, gene expression, biochemistry, physiology, or pharmacology. The candidates are expected to establish independent research programs in the area of heart failure and/or ischemic heart disease, collaborate with other members of the Institute, and teach both undergraduate and graduate students. Salary will be commensurate with experience and qualifications. Please send your résumé and statement of research goals and arrange for three letters of reference by June 1, 2002, to: **Dr. N.S. Dhalla, Institute of Cardiovascular Sciences, St. Boniface General Hospital Research Centre, 351 Tache Avenue, Winnipeg, Manitoba R2H 2A6 Canada.** *The University of Manitoba encourages applications from qualified women and men including members of visible minorities, aboriginal peoples, and persons with disabilities. All qualified Canadians are encouraged to apply; however, Canadians and permanent residents will be given priority.*

RESEARCH ASSOCIATE NEURONAL IMAGING

The Neurosciences Program at the Ottawa Health Research Institute (**website: http://www.ohri.ca**) seeks a Research Associate to participate in experimental design, data acquisition, and analysis of confocal and/or multiphoton neuronal images in brain slice and culture preparations. Facilities include a Zeiss 510 microscope, 10w laser, and patch clamp setup. Requirements include advanced postdoctoral experience in imaging in the neurosciences. Salary in the range of $60,000 CAN plus benefits. Interested candidates should submit curriculum vitae and names of two references by **FAX: 613-761-5024** or by **e-mail: confocal@ohri.ca.**

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Sr. Scientist

The candidate will be responsible for establishing a protein expression lab within the biomolecular structure group. The lab will be responsible for designing and generating expression systems (primarily in bacteria and insect cells) for the production of soluble protein for biophysical studies (X-ray, NMR). In addition, the lab will be heavily involved in the scale-up and optimization of fermentation conditions (particularly insect cells), and in the purification of recombinant protein. The lab's activities will be highly coordinated with the protein purification group that shares responsibility for fermentation and purification.

Requirements include a Ph.D. or equivalent with at least 2 years of post-doctoral experience in the expression of soluble, recombinant proteins (e.g. cloning, fermentation, expression testing, purification). Experience in developing and optimizing bacculovirus expression systems, in protein chemistry (purification, protein analytics) is required. Experience in the production of proteins for biomolecular studies (X-ray, NMR), in multi-parallel cloning strategies, in cloning automation, and in isotopic labeling is beneficial. An ability to coordinate research within a diverse team environment and strong communication skills are essential. **Requisition #12013.**

Associate Scientist - Arthritis Biology

The position is within the Arthritis and Bone Metabolism therapeutic area and is directed towards supporting the effort in the discovery of new drugs for arthritis. The candidate will be involved in evaluating new drug candidates in enzymatic, biochemical, immunological and cell based assays utilizing both robotics and manual procedures. In addition, the individual will be responsible for the tissue culture activities within the lab as well as evaluation of clinical specimens. Other responsibilities include data recording and analysis, report writing and participating in drug discovery team activities.

Requirements include a B.S., B.A. or M.S. degree in biological sciences with at least 2 years relevant work experience. Specific experience in ELISA, sterile cell culture techniques, and the use of Excel spread sheets and databases is essential. Experience in Western blotting and related techniques is highly desirable. The candidate should be a person who pays careful attention to details, has a high awareness of laboratory safety, and also can work independently as well as with other members of a drug discovery team. **Requisition #12688.**

Scientist - Infectious Diseases Biology

You will perform various assays to screen newly synthesized compounds to support the structure-activity relationship studies in different programs. Responsibilities include: running enzymatic assays or cell-based assays routinely, generating reproducible and reliable results, and accomplishing tasks in a timely manner. Familiarity with computer system for efficient data handling, record keeping and documentation is desired. Knowledge in biochemistry, molecular biology and microbiology fields is advantageous.

Requirements include a B.S. degree (plus 1-2 years of experience) or M.S. degree in the Biochemistry/Molecular biology fields. Working experience with mammalian cell culture is preferred. Good oral and written communication skills are essential. **Requisition #13019.**

Interested candidates, please apply online for fastest consideration at www.joinnovartis.com referencing the five digit Requisition ID # and proceed with the application process as instructed. We are an equal opportunity employer M/F/D/V. Principals Only.

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UNIVERSITY OF OSLO

THE BIOTECHNOLOGY CENTRE OF OSLO

▪ Centre Director

The Biotechnology Centre of Oslo (BiO) is an interdisciplinary centre within the University of Oslo, entirely devoted to research and teaching (at M.Sc. and Ph.D levels). At present, the Centre consists of five groups carrying out research in areas of cancer biology, cell biology, microbial pathogenesis, proteomics and bioinformatics. The Centre is also the home of the Norwegian EMBnet node and the Norwegian Salmon Genome Project database.

The Norwegian government has recently introduced a national program for functional genomics (FUGE) and the University has designated biotechnology and molecular biology as a priority area for the next years. This effort is directed by the Steering committee for research in molecular biology, biotechnology and bioinformatics (EMBIO).

The Centre will be reorganised according to plans approved by the University Board with six new research groups being established during a 5-6 year period, starting 2002, and is expected to play a central role in developing high quality research at the University of Oslo. Applications are here invited for the position as Director of the Centre. The selected individual will play an instrumental part in this future development of the Centre. The steering committee has proposed that the reorganised Centre should be renamed The Centre for Genome Research. Further information about the Centre is available at www.biotek.uio.no.

The successful candidate will be offered a renewable contract for 4 – 8 years with an initial annual budget of NOK 3 millions to cover salaries for postdoctoral and PhD fellows, technical assistance, minor equipment and running costs. The salary is negotiable. The position is included in the Norwegian health insurance and retirement pension schemes.

Candidates must document experience in scientific and organizational leadership and an outstanding record of achievements in molecular/cell biology (prokaryotic or eukaryotic), biotechnology or bioinformatics. Please send a CV including a summary of present and future research plans, and the names and addresses of three references.

Informal enquiries should be addressed to the chairman of the EMBIO Steering committee, professor Ole Petter Ottersen, o.p.ottersen@basalmed.uio.no, telephone +47 90 13 26 10 or to the EMBIO administrator, Tore Ellingsen, t.i.ellingsen@admin.uio.no, telephone +47 22 85 15 85. Applications should be sent to EMBIO, University of Oslo, P.O.Box 1117 Blindern, N-0317 Oslo, Norway before April 15, 2002.

mayo

MAYO CLINIC
DIRECTOR
BIOMEDICAL MASS SPECTROMETRY AND PROTEOMICS FACILITY

Mayo Clinic, Rochester, invites applications for the position of Director, Biomedical Mass Spectrometry and Proteomics Facility. The candidate must have completed a doctoral degree in a suitable discipline (biochemistry, molecular biology, pharmacology, chemistry, physics) and must have expertise in the area of mass spectrometry, particularly as it applies to the analysis of protein structure and protein quantitation. The Biomedical Mass Spectrometry and Proteomics Facility is a part of a larger proteomics effort at Mayo Clinic and Foundation, and the candidate is expected to work closely with other investigators with similar interests. The candidate will be expected to supervise an existing, superbly equipped, developmental mass spectrometry and cellular proteomics facility and to develop an independent research program. Substantial start-up funds and funds for new mass spectrometry equipment are available. The candidate would be eligible for a suitable academic appointment (assistant professor to full professor, depending on qualifications) in an appropriate department (e.g. Biochemistry and Molecular Biology, Molecular Pharmacology and Experimental Therapeutics, Immunology, Physiology and Molecular Biophysics).

The Mayo Clinic is located in Rochester, Minnesota, and is regarded as one of the premier biomedical, clinical, and research institutions in the United States. Applicants are encouraged to submit their curriculum vitae and bibliography, summary of past accomplishments, and names of three references no later than July 1, 2002 to:

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Phone: (507) 284-0020 Fax: (507) 266-4710

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Chair, Department of Life Sciences
Arizona State University West

The College of Arts and Sciences at Arizona State University West invites applications for the position of Chair of the Department of Life Sciences.

The chair reports directly to the Dean and represents the interests of the department to the college dean, university administration, and external community. The chair will be actively engaged in the recruitment of a diverse student population, the development of community-based partnerships, and the securing of external research funds to support faculty research and undergraduate programs. Other areas of responsibility include budget planning and maintenance, personnel decisions, and faculty and program development.

QUALIFICATIONS REQUIRED: PhD in relevant discipline and record of research, teaching, and service that merits appointment as a Professor with tenure. Experience working in an interdisciplinary/multidisciplinary environment and developing undergraduate curricula and programs. Demonstrated commitment to working with a diverse student population. Experience evaluating faculty for promotion and tenure.

QUALIFICATIONS DESIRED: Record of service as a department chair or equivalent administrative position. Budget experience. Experience developing external grants to support undergraduate program development and participating in community-based undergraduate research; experience developing articulation agreements with other institutions. Demonstrated effective communication skills. Demonstrated commitment to mentoring faculty.

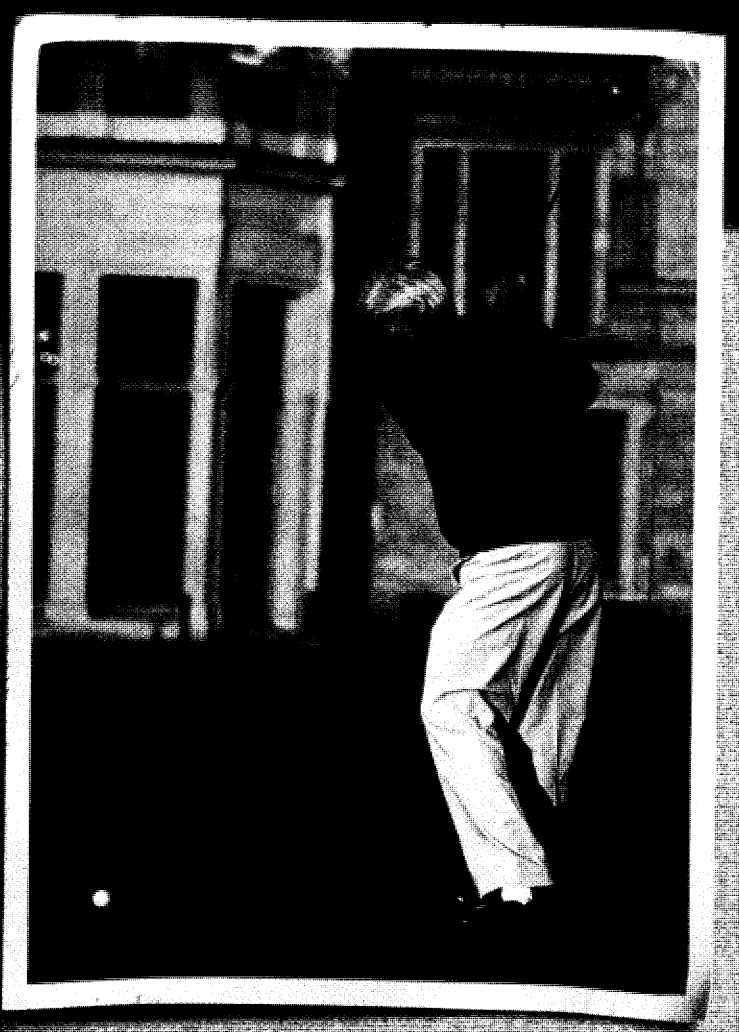
APPLICATION DEADLINE: April 1, 2002, and the 15th and 1st of every month thereafter until position is filled.

APPLICATION PROCEDURE: Send (1) letter of application that includes a description of professional background and goals, (2) statement of teaching philosophy and experience, (3) description of current and future research plans that emphasizes participation of undergraduates, (4) curriculum vitae with contact information, including telephone number and e-mail address, (5) minimum of three letters of reference . All correspondence should be sent to **Office of the Dean, College of Arts and Sciences, attn: Brian Richardson, Mail Code 3051, Arizona State University West, PO Box 37100, Phoenix, AZ 85069-7100.** We cannot accept electronic applications.

GENERAL INFORMATION: The Life Sciences department at Arizona State University West emphasizes hands-on experience for undergraduates in faculty research laboratories and internships in private sector and government organizations. We are committed to recruiting and retaining students and faculty from groups that have historically been underrepresented in biology. Most of our majors plan careers in biomedicine, and our courses blend biomedical and comparative perspectives. We have ongoing teaching and research collaborations with biomedical research facilities, medical colleges, and state and federal wildlife agencies.

THE ONLY THING YOU WANT TO KNOW ABOUT SCOTLAND IS HOW COMPANIES LIKE AGILENT, SUN MICROSYSTEMS AND IBM VALUE OUR HIGHLY SKILLED AND EXPERIENCED WORKFORCE.

RIGHT. SO ABOUT ST. ANDREWS THEN.



The Royal & Ancient Golf Club was founded at St. Andrews in 1754 and governs the rules of golf everywhere in the world except the USA.

The original "Old Course," or Home of Golf, consisted of 22 holes. It was later reduced to 18, initiating the current standard.

King James II of Scotland banned golfing in 1457 because he thought it was distracting young men from their archery practice.

St. Andrews' rich heritage and luscious greens have lured many to Scotland. But now it's our modern infrastructure and technological talent that's attracting all the attention.

Our famous sheep, Dolly, was the first mammal cloned from an adult cell and a direct result of Scotland's thriving and inventive biotech industry. In electronic design, our innovative Alba Campus is leading the world's R&D in System Level Integration technology and promoting enormously successful collaborations between top universities and private sector partners in the industry.

Our highly skilled, highly motivated and experienced workforce has enticed a number of companies to expand in Scotland — including Quintiles, Agilent, Panasonic Owl, IBM and Sun Microsystems. Scottish Development International is a government-funded organisation that provides your business with recruitment, location and support services. This ensures you full access to the knowledge of our Scottish companies, our research, technology, innovation, people and wit. To find out more about bringing your business to Scotland, or bringing Scots to your business, visit our Web site. www.scottishdevelopmentinternational.org

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Johnson & Johnson Pharmaceutical Research & Development, L.L.C.,

located in Raritan, New Jersey, conducts pharmaceutical research in therapeutic areas including anti-infectives, central nervous system, endocrinology, inflammation, immunology and oncology.

Postdoctoral Fellowship/Bioinformatics (Req. Code: 02-0000533)

As a vital member of the bioinformatics team, you will participate in the development of expertise in the design, analysis and interpretation of DNA microarray experiments in the diagnostic and therapeutic fields. You'll also use bioinformatic approaches to investigate novel targets and identify candidate genes to use as surrogates markers or diagnostics.

To qualify, you must have a Ph.D in molecular biology or a related life science and experience in gene expression data analysis and other genomic applications or a Ph.D in mathematics or statistics with a strong interest in genomic technologies. PC proficiency is required (preferably in database management, programming using Perl, Visual Basic, etc.), as are excellent interpersonal and oral/written communication skills. A solid statistical background is highly desirable.

Find more. Visit **jnj.com/careers** to explore Johnson & Johnson and to establish a profile with our *Career Finder* system. Please reference company, requisition code number and publication with all specific applications. Johnson & Johnson is an equal opportunity employer committed to diversity.

Johnson & Johnson

MANTEIA Predictive Medicine

Successful achievement of our core technology, permitting massively parallel DNA amplification and sequencing, will enable us to rapidly perfect and greatly expand the worldwide market for revolutionary genetic-based tests to predict individualized drug response and disease susceptibility.

To carry out our project, we are seeking highly motivated

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- **SCIENTISTS**

For these positions, we need hands on experience in DNA manipulation, processing, biochemistry and biophysics including solid phase DNA hybridization and DNA enzymology. At least two years post-doctoral experience in biologically related technologies development are required.

Positions in Bioinformatic are also available in particular for public and private database management, data annotations and algorithm expertise. At least one year post-doctoral or industrial experience is needed.

The successful candidates should be problem-solving, results-oriented, dynamic with drive and determination and have excellent social competence and communication skills.

Compensation package is highly competitive – including stock options - and will be consistent with the level of experience of the candidate.

These positions provide an unrivalled opportunity to play a significant role in this high profile R&D area and if you feel that this is just made for you, please enquire and send your CV, preferably by e-mail, to :

jobs@manteia.com or to the Human Resources Department, MANTEIA S.A., Zone Industrielle, 1267 Coinsins, Vaud, Switzerland.

MANTEIA is a spin-off from SERONO active in the genomics field. It was incorporated in Switzerland in November 2000. MANTEIA is privately held and currently has 40+ employees working in its premises, an R&D facility, located in Coinsins, in the Vaud canton outside Geneva.

GLOBAL OPPORTUNITIES

National University of Singapore (NUS) invites applications for a full-time tenure-track faculty position for an Assistant Professorship in the Department of Anatomy. The Department has a tradition of excellence in teaching and research.

We are looking for an outstanding faculty member. The successful applicant should posses a basic degree in Medicine, Dentistry or Science with a PhD degree (or equivalent) and should have at lease two years of postdoctoral experience.

All faculty members are expected to teach human anatomy, histology and/or neuroscience at both undergraduate and graduate levels, supervise graduate students, and conduct rigorous research programmes that generate external funding and scholarship and intellectual output typical of that of a world-class university. A medical background with research experience in cell biology or molecular neurobiology will be an advantage.

Interested parties should submit their applications, supported by a resume, detailed research plan and contacts of at least 6 references directly to:

Head
Department of Anatomy
Faculty of Medicine
National University of Singapore
4 Medical Drive
Singapore 117597

Closing Date: 30 June 2002

Only shortlisted candidates will be notified.

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Help us answer these and other complex biological questions.

We are looking to fill the following positions:

Research Scientists

Biology Post-Doctoral Associates

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Computational Biologists

Computational Post-Doctoral Associates

The successful candidate will have a Ph.D. in a relevant scientific discipline, between 0-5 years of research or computational experience, and an established research record commensurate with level of experience.

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WHITEHEAD INSTITUTE

Center for Genome Research

Department of Biological Sciences

Professorship and Chair of Department

Applications are sought for the Chair of Department (Professor) in Biological Sciences. The position is permanent and the postholder, who will Chair the Department for five years in the first instance, should have management/administrative experience.

Applications are welcome from candidates with a strong research profile in any of the nine research areas within the Department. The research interests of the Department can be seen on the Departmental Web page (http://www.bio.warwick.ac.uk) and will be described in the further particulars provided to applicants.

Further enquiries about the post may be made to Dr Andrew Easton, the Acting Chair, (tel: 024 7652 3517; email: A.J.Easton@warwick.ac.uk) or to Professor Stuart Palmer, the Deputy Vice-Chancellor (tel: 024 7657 4004; email: S.B.Palmer@warwick.ac.uk). More information about the post can be found at www.jobs.ac.uk/jobfiles/AC1370.html

Application forms and further particulars can be obtained from the Personnel Office, University of Warwick, Coventry CV4 7AL tel: 024 7652 3627 email: recruit@warwick.ac.uk. Please quote reference 30/SA/01

Closing date for applications is 29 March 2002

UNIVERSITY OF WARWICK

FACULTY POSITION
DANA-FARBER CANCER INSTITUTE
JOINT PROGRAM IN TRANSFUSION MEDICINE

Invite applications for the faculty position of Medical Director, Connell and O'Reilly Families Cell Manipulation Core Facility, which is the designated core facility of the Dana-Farber/Harvard Cancer Center (DF/HCC). The goal of this facility is to assist DF/HCC investigators in developing new cell-based therapies for cancer and to support clinical research studies designed to evaluate the toxicity and efficacy of these novel treatments. This facility currently supports a large number of clinical trials that require extensive in vitro cell manipulation. These cellular therapies include processing of hematopoietic stem cells for autologous or allogeneic transplantation, generation of tumor vaccines and preparation of immune cell populations for adoptive cellular therapy. The candidate should have research experience in areas relevant to hematopoiesis, vaccine development or aspects of cell biology relevant to cell therapy and/or tissue engineering. Collaborations with colleagues in related disciplines of both clinical and basic research are important aspects of this position. Participation in post-doctoral training programs of the Joint Program in Transfusion Medicine, Hematology/Oncology and Pathology departments is encouraged. It is expected that the successful candidate will develop an independent clinical and/or basic research program. The position will be at the level of Assistant or Associate Professor at Harvard Medical School.

Send CV and cover letter to:

Leslie E. Silberstein, M.D.
Director
Joint Program in Transfusion Medicine
Children's Hospital
Bader 410
Boston, MA 02115

We are actively committed to increasing the diversity of our workforce. AA/EOE.

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You deserve a work environment that will expand your talents beyond who you are today. A place that fosters innovation, recognizes performance, and builds people with best-managed practices. That's what we're all about at Pharmacia. As a top-tier pharmaceutical company, our broad product portfolio, robust pipeline of new medicines, and vast resources provide the ideal arena for those who wish to aim higher and push harder to improve health around the world.

The following opportunity is a contract position, engaged through Quantum Resources, a third-party employer. Selected candidates will work at our St. Louis, Missouri, facility for an appointment of two years.

POSTDOCTORAL RESEARCH ASSOCIATE, EMERGING TECHNOLOGIES

You will work with a multidisciplinary team comprised of members from Functional Genomics, Pharmacology and Global Investigative Toxicology groups to assist in the development of cell models derived from human bone marrow stem cells (HBMSC). These will be used to predict potential cardiotoxicities associated with new drug candidates during preclinical development. Requires a PhD in Cell Biology or related field, experience in stem cells, and a working knowledge of cell isolation, cell culture, and cellular/molecular biology of stem cells.

For confidential consideration, please send your resume, indicating the position of your interest, to: **Beryl Galer, Quantum Resources, 8191 Moorsbridge Road, Suite G, Kalamazoo, MI 49024, Re: Emerging Technoligies-STL. Email: bgaler@quantum-res.com, referencing "Emerging Technologies-STL" in the subject line.** For more information and other opportunities, please visit our website. EEO/AA EMPLOYER M/F/D/V

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Our excellence in the fields of viral diseases and cancer, and the strength of our academic collaborators and corporate partners, position us as a leader in the development of novel therapies for life-threatening diseases. Located in Tarrytown, NY, just 30 miles North of NYC, careers with our progressive company offers highly competitive salaries, outstanding benefits and generous stock programs. Expansion of our product pipeline has created outstanding opportunities in the area of biologics process development.

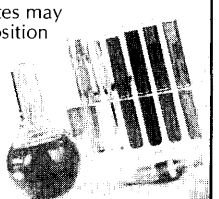
DIRECTOR
Process Development

Direct the development, optimization and implementation of processes for producing novel biological agents for clinical use. Must have a PhD or equivalent in biological or engineering sciences and 7 yrs exp. in all aspects of upstream and/or downstream cGMP process development, scale-up, validation and implementation. Expertise in bioreactor-based production of mammalian-derived vaccines, antibodies and fusion proteins is critical. Excellent personnel/project management and oral/written communication skills required.

RESEARCH SCIENTIST
Process Development

Responsible for hands-on performance of bioreactor and/or purification processes, optimization of upstream/downstream process yield, and preparation of preclinical materials to support R&D. Must have a BS/MS in biological or engineering sciences. Familiarity with cGMPs and process scale-up is critical. At least 3 yrs experience in mammalian cell culture, bioreactor operation, fermentation, media optimization and/or protein purification, column chromatography, and protein analysis required.

For immediate consideration, qualified candidates may send CV with salary requirements, indicating position desired, to: **Progenics, HR Dept, P.O. Box 549, Tarrytown, NY 10591. Fax: 914-789-2863. E-mail: hr@progenics.com** EOE



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Global Research & Development

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Explore these Postdoctoral Fellowship opportunities, all located in Ann Arbor, Michigan.

Investigational Pathology Fellowship

The focus of this position will be on the identification of the pathogenesis of vascular injury. You will employ proteomic and genomic research methodologies in animal models and endothelial and vascular smooth muscle cell cultures to determine the mechanisms that control the number and functioning of receptors in vivo and in vitro. You must possess a PhD in Pharmacology, Molecular Biology, Physiology, Biochemistry, Pathology or related field, and have animal model and cell culture experimentation experience to be considered. Req. #15Jan0210364

Lead Optimization Fellowship

We are looking for a Postdoctoral candidate to develop an expert system for prodrugs using literature extraction, knowledge-base development and an in-house expert system platform while applying the current structure-based engine to novel applications. Additionally, you will design innovative experiments with the aim to overcome common prodrug issues. You must have a PhD in Physical Organic or Organic Chemistry, an aptitude for computer languages and willingness to learn an artificial intelligence language, such as Prolog. Req. #15Jan0210361

In Vivo Cardiovascular Electrophysiology Fellowship

Join us and contribute to the development and understanding of a novel animal model for defining mechanisms and risk factors for drug-induced pro-arrhythmia. This position will require time spent at Pfizer's Ann Arbor site and at Michigan State University College of Veterinary Medicine. You must possess a PhD, MD or DVM, and a background in cardiovascular pharmacology, physiology, toxicology or a related field. Experience with electronic data collection and the ability to develop novel techniques are a must. Experience with whole animal models (preferably canine) and surgical expertise are highly desirable. Req. #17Jan0210403

Molecular Pathology of Vasculitis Fellowship

Apply your expertise in molecular biology to this opportunity to compare the RNA and protein expression of vasculitis in animal models and humans with vasculitis. You will generate expression profiles for RNA and SELDI systems, which will then be compared to human biopsies. This position requires a PhD, MD or DVM, with an emphasis in molecular biology. A background in mechanisms of disease (including expertise in molecular diseases) is preferred, and experience with animal models is a plus. This project will be conducted by Pfizer's Drug Safety Evaluation Department in conjunction with the University of Michigan Department of Pathology. Req. #15Jan0210365

We encourage all applicants to apply by emailing your resume, indicating the appropriate Req. # in the subject field, to SCI@pfizerresumes.com. If necessary, you may also mail your resume, indicating Req. #, to Pfizer Resume Processing Center, 630 Boston Road M-104, Billerica, MA 01821, Attn: Softshoe Resumes. EOE

www.pfizer.com

McGill University
Department of Psychology
Canada Research Chair in Psychology of Language

The Department of Psychology of McGill University invites applications from exceptional candidates for a Tier II Canada Research Chair in Psychology of Language. The successful applicant will have a tenure-track appointment at the Assistant or junior Associate Professor level. Consideration will be given to candidates with interests in any domain of scientific language research including, acquisition, speech and language perception and processing, neural representation, and language disorders. The Department has excellent facilities for interdisciplinary research through the Centre for Language, Mind, and Brain which links researchers in related academic units at McGill University (Linguistics, Communication Sciences and Disorders, and Education), the Montreal Neurological Institute, and other universities in Montreal.

Applicants are expected to have a doctorate in psychology or a closely related field, a record of significant, externally-funded research, an aptitude for undergraduate and graduate teaching and the ability and interest to work collaboratively in an interdisciplinary research environment. Consideration of applications will begin March 1 and continue until suitable candidates have been identified. Applicants should submit a curriculum vitae, a description of research interests and philosophy, a statement of teaching interests and philosophy, selected reprints of publications, and should arrange for three confidential letters of recommendation to be sent to

Chair, Psychology of Language Search Committee
Department of Psychology
McGill University
1205 Dr. Penfield Avenue
Montreal, Quebec, Canada H3A 1B1

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

Departmental Chair, Environmental Health Department
Boston University School of Public Health
Boston University

The Boston University School of Public Health (BUSPH) is seeking a Chairperson for its Environmental Health Department. This dynamic and diverse Department offers both Masters and Doctoral level degrees, and is committed to expanding its fifteen-person faculty. The school's mission is to promote a stimulating academic environment that supports excellence and innovation in education, research, and service to improve the health of local, national, and international populations, particularly the disadvantaged, underserved, and vulnerable.

The successful candidate for this position should have attained the rank of Professor or Associate Professor or be in a senior leadership position if applying from a governmental or non-governmental institution. The candidate should have a distinguished record of scholarship in his/her sub-discipline and a commitment to excellence in both research and education. A proven ability to attract external funding and a commitment to the effective administration of a strong and growing academic department are important. Scientist/educators from laboratory sciences, epidemiology, and social sciences are encouraged to apply.

BUSPH and the Department of Environmental Health are receptive to candidates interested in expanding the department into new areas of inquiry complementing the ongoing efforts of the departmental faculty. Current department activities include a large Superfund Basic Research Program, and the ongoing research programs in environmental epidemiology, immunotoxicology, urban environmental health, occupational safety and health, and environmental health policy. Interdepartmental collaborations within BUSPH and collaborations with the BU School of Medicine faculty are strongly encouraged and logistically feasible.

Please send a curriculum vitae and letter of interest by June 1, 2002 to: **Environmental Health Search Committee, c/o Office of the Dean, Boston University School of Public Health, 715 Albany Street, Boston, MA 02118-2526.**

Boston University is an Equal Opportunity Employer.
We encourage applications from women and minorities.

ASSISTANT/ASSOCIATE PROFESSOR

The Department of Surgery at the University of Tennessee Medical Center invites applications for a tenure-track (*negotiable*) **Assistant/Associate Professor** position to direct the research activities in the vascular research laboratory in the Division of Surgical Research.

Research expertise must include molecular and whole animal approaches to address functional aspects of vascular biology. The successful applicant will be expected to have a developed and extramurally funded research program in vascular biology and interact with clinical specialists in vascular disease and participate in the teaching of surgery residents and vascular fellows. Qualifications include a PhD and/or MD (or DVM). In addition to start-up funds, the appointee will be expected to compete successfully for research support from NIH and/or other granting agencies.

Review of applications will continue until position is filled. Applicants should send curriculum vitae, statement of research interests and future plans, representative reprints, and names of three references to **Dr. Michael D. Karlstad, Chair, Search Committee, Department of Surgery, Graduate School of Medicine, University of Tennessee Medical Center, 1924 Alcoa Hwy, Knoxville, TN 37920, mkarlsta@mc.utmck.edu, (865) 544-9077.**

GSM is an EEO/Affirmative Action/Title IX/Section 504/ ADA Employer.

UNIVERSITY OF TORONTO

TREE GENOMICS/GENETICS

The Department of Botany and the Faculty of Forestry at the University of Toronto invite applications for a tenure stream faculty position at the Assistant Professor level in the area of tree genomics/genetics. Areas for recruitment include, but are not limited to, plant/tree molecular biology, forest genetics, gene expression, and molecular applications and use of model systems for tree improvement. It is intended that the successful applicant will be nominated for a Canada Research Chair at the junior (Tier II) level. Accordingly, the successful candidate is expected to be an outstanding scientist whose research and teaching will make major contributions to the field.

The successful applicant will be expected to participate in both undergraduate and graduate teaching in the areas of molecular biology and genetics, and to interact with faculty in both Forestry and Botany working in related fields.

Applicants should arrange to have four letters of reference sent directly to the address below. In addition the applicants should forward their curriculum vitae, copies of significant publications, and statements of research and teaching interest to the **Chair, Tree Genomics/Genetics Search Committee, Department of Botany, University of Toronto, 25 Willcocks Street, Toronto, ON M5S 3B2 Canada** before April 30, 2002. Inquiries should be directed to Dr. J. R. Coleman at **coleman@botany.utoronto.ca.**

The University of Toronto offers the opportunity to teach, conduct research, and live in one of the most diverse cities in the world, and is strongly committed to diversity in the community.

The University especially welcomes applications from visible minority group members, women, Aboriginal persons, persons with disabilities, members of sexual minority groups, and others who may contribute to further diversification of ideas.

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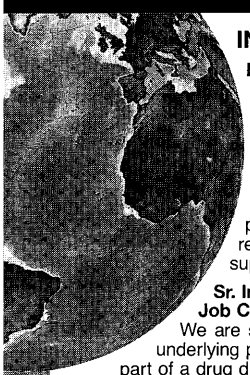

INFLAMMATORY BIOLOGY

We are the Bristol-Myers Squibb Pharmaceutical Research Institute (PRI), one of the world's most productive, respected and innovative research organizations. We are dedicated to extending and enhancing human life by discovering and developing innovative, cost-effective medicines that address significant unmet medical needs. All positions are located in Wilmington, Delaware.

Biochemical Pharmacologist
Job Code: biochem-ams
We are seeking a Biochemical Pharmacologist to work with GPCR assay development, the analysis of ligand-receptor interactions and modeling kinetics. Candidates must have a PhD, at least 3 years' post-doctoral experience and knowledge of G-protein coupled receptor pharmacology and chemokine biology. Experience in membrane isolation, protein isolation and purification, and membrane receptor reconstitution techniques is required. The ability to function as part of a team with good supervisory skills is necessary.

Sr. In-Vivo Pharmacologist
Job Code: invivo-ams
We are seeking an In-Vivo Pharmacologist to establish disease models to assess novel therapeutics, design studies to characterize underlying physiology in animal models of disease and perform pharmacokinetic and pharmacodynamic studies with novel therapeutics as part of a drug discovery team. Selected candidates will have a DVM or PhD, in-depth knowledge of animal physiology and at least 7-10 years' industrial related experience. Expertise in inflammation/autoimmunity models to study arthritis, asthma, pulmonary and neuro-inflammation, and atherosclerosis is required. A firm understanding of cellular and molecular aspects of leukocyte biology is necessary. The ability to function as part of a team with good supervisory skills is essential.

Cellular/Molecular Immunologists
Job Code: cellmol-ams
We are seeking Cellular/Molecular Immunologists to design and implement cell-based assays to assess cytokine, chemokine and metalloproteinase function, conduct mechanism of action studies with novel therapeutics and identify and propose new targets for drug discovery. Selected candidates will have a PhD or MD and at least 3+ years' post-doctoral experience along with in-depth knowledge of innate and acquired immunity. Technical expertise in cell biology, experience in isolation and characterization lymphocyte and leukocyte populations and the ability to apply molecular biological methods to study immune-cell function are required. The ability to function as part of a team with good supervisory skills is essential.

Biochemist/Molecular Biologists
Job Code: biomol-ams
This position requires that the selected individuals develop and implement in-vitro assays to assess enzyme kinetics and receptor binding parameters, as well as clone, express and purify needed protein reagents for use in drug screening assays. Additional duties include the characterization of biochemically novel pharmacological agents to further define the mode of action on therapeutically relevant targets.

To qualify, candidates must have a BS or MS and 5+ years of relevant experience in protein purification, gene expression, oligonucleotide technology, signal transduction, enzyme kinetic and receptor binding assay development, or a PhD with 1-2 years of post-doctoral experience. Drug discovery experience in an industrial environment is required, as is the ability to work in a team environment.

Biological Scientist
Job Code: bio-ams
The Biological Scientist will be responsible for the validation of novel therapeutic targets and the assessment of compound pharmacology in inflammatory disease animal models with emphasis on molecular basis of efficacy and toxicity. Candidates must have a BS or MS in Biological Science or equivalent, 3+ years' related experience and a biological science background with technical experience in in-vivo pharmacology. Experience with animal handling and dosing protocols is required. The ability to work independently in a team environment is also an essential function of this position.

Sr. Cell Biologist
Job Code: cell-ams
We are seeking a Cell Biologist with knowledge of immunology/leukocyte biology (or a closely related field) to design and implement cell based binding and functional assays with a focus on chemokines and metalloproteases. Candidates should have experience in cell culture technology and the ability to design and implement functional cell-based assays for receptor-based and enzymatic drug targets. Knowledge of the drug discovery processes is highly desirable. A demonstrated ability to perform as part of a team and good supervisory skills are essential. A PhD and 7-15 years' postdoctoral experience are required.

BIOTECHNOLOGY GROUP

Fermentation Protein Expression Scientist
Job Code: ferm-ams
We are currently seeking an experienced MS or BS level Biologist in the area of recombinant protein expression. The successful candidate should have experience with one or more of the following expression systems: E. coli, Yeast, Baculovirus or other insect systems and/or mammalian cell culture. Additionally the individual should have experience designing and implementing fermentation and bioreactor strategies up to a 60-liter scale. It is also expected that the candidate have strong analytical skills, a working knowledge of expression cloning, and a strong appreciation for down stream processing. It is crucial that the applicant be a self-starter, have the ability to work in a multidisciplinary team, and feel comfortable in a diverse work environment.

Expression Profiling - Biologist and Analyst
Job Code: express-ams
We are seeking molecular biologists to provide expression profiling results and analysis for multiple research areas. This position requires RNA isolation, quantitation (with TaqMan PCR and DNA microarrays), analysis, and presentation of findings. This position also relies on the selected individual developing and evaluating new methods for expression profiling. Candidates must have a MS or BS in Biology or a related field and at least 2+ years' experience in molecular biology. Computational skills and knowledge would be beneficial (e.g. an understanding of clustering methods, data base queries, or even programming).

CENTRAL NERVOUS SYSTEM DISEASES

Senior Neuroscientist
Job Code: neuro-ams
Ideal candidates will hold a relevant doctoral degree along with a minimum of 3 years' postdoctoral experience in industry or academic environments, working in one of the following areas: CNS Pharmacology and Neurochemistry, Molecular and Cellular Neuroscience or Behavioral Studies. A specialized knowledge in any of the following is a definite asset: Alzheimer's and other neurodegenerative disorders, anxiety/depression, or obesity/feeding regulation. A demonstrated ability to perform as part of a team and good supervisory skills are essential.

If you would like to join our highly collaborative team based in Wilmington, DE, please forward your resume to:

Bristol-Myers Squibb
Pharmaceutical Research Institute
PO Box 4000, Princeton, NJ 08543-4000
Fax: (609) 252-3242
E-mail: recruit.pri@bms.com
Please reference job code.

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Bristol-Myers Squibb
Pharmaceutical Research Institute

EMPLOYMENT OPPORTUNITY

CHIEF, Supervisory Scientist
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Carcinogenesis Division
Cellular Toxicology Branch
Research Triangle Park, North Carolina

The U.S. Environmental Protection Agency (EPA) is seeking qualified applicants for the position of Supervisory Biologist, or Supervisory Physical Scientist, GS-401/1301-14/15 (*Announcement # EPA-RTP-DE-2002-0083*). The position serves as Chief, Cellular Toxicology Branch, Environmental Carcinogenesis Division (ECD), National Health and Environmental Effects Research Laboratory (**http://www.epa.gov/nheerl/ecd/**). This position is located in the Research Triangle Park, North Carolina. This is a permanent, full-time position with a salary range of $76,271 to $116,633 per annum, commensurate with qualifications. The selected candidate will be eligible for a full benefits package, including relocation expenses, health insurance, retirement, and vacation and sick leave benefits. United States citizenship is required.

The ECD consists of three Branches, Cellular Toxicology, Molecular Toxicology and Cancer Biology, which together constitute a multidisciplinary carcinogenesis program of approximately 55 employees. The overall aim of the Division is to conduct research that develops mechanistic data for reducing uncertainty in the cancer risk assessment process and for assessing the impact of environmental exposures on public health status. An emphasis is on the effects of environmental chemicals on cellular housekeeping processes such as DNA and cell replication, DNA damage responses, transcription and translation, and cell cycle controls using the most current technological approaches. The Branch Chief will direct and manage the research program of the Cellular Toxicology Branch. This program includes an intramural research program and pre and postdoctoral programs. Working with other Division managers and research scientists, the incumbent provides scientific and managerial leadership of the program and develops a research program within the thematic framework of the Division. In addition, the Branch Chief manages budgets and related resources and supervises the staff to meet the evolving needs of the EPA.

HOW TO APPLY: Vacancy announcement and application instructions will be posted on the U.S. Office of Personnel Management (OPM) web site at **http://www.usajobs.opm.gov/a9epa.htm** as of March 11, 2002 under announcement number **RTP-DE-2002-0083**. The application deadline is April 19, 2002. For further information, contact the **EPA Human Resources Management Division at (800) 433-9633**, and reference "ECD, CTB Branch Chief position."

The U.S. EPA is an Equal Opportunity Employer.

MASSACHUSETTS GENERAL HOSPITAL

The Massachusetts General Hospital (MGH) Cancer Center in conjunction with the MGH Department of Pathology is seeking a molecular biologist/pathologist interested in the molecular analysis of human ovarian cancer. This individual will join a multidisciplinary team of clinicians, clinical researchers, epidemiologists, and basic laboratory investigators working together through the Dana Farber Harvard Cancer Center Network as part of the Gynecologic Oncology Research Program. The selected candidate will be provided with resources to develop an independent program evaluating basic mechanisms important in ovarian carcinogenesis. Areas of interest might include signal transduction, molecular mechanisms of carcinogenesis or animal models of ovarian carcinogenesis. In addition, resources are available to develop a molecular pathology core that will be designed to analyze human ovarian cancer or other gynecologic tumors using evolving molecular platforms such as transcriptional analysis and proteomics. Competitive candidates are expected to have an outstanding background in molecular biology with additional training/expertise in either pathology, medical or gynecologic oncology. Training in gynecologic pathology or human histology is desirable but not required. Harvard Medical School appointment will be commensurate with the applicant's prior accomplishments.

Interested candidates should contact: **Michael Seiden, MD, PhD at mseiden@partners.org, or 617-724-3123 or fax 617-724-3166**.

The Massachusetts General Hospital is an Equal Opportunity Employer, women and minority candidates are encouraged to apply.

CHAIR

Department of Biochemistry
Emory University School of Medicine

Emory University School of Medicine invites nominations and applications for the position of the Chair of the Department of Biochemistry. This position offers outstanding resources and institutional commitment in the setting of a major academic health center. Over the past five years the School of Medicine has been growing in NIH funding at a rate unsurpassed by any other research-intensive school of medicine. With 16 primary faculty members with broad research interests, 29 graduate students and 17 post-doctoral fellows, the department of biochemistry was ranked 19th in NIH funding in FY00 among medical school biochemistry departments.

We are seeking an individual who has strong leadership abilities, previous academic and administrative experience, the ability to develop and foster preeminent departmental research programs, and a commitment to maintain and enhance strong medical and graduate educational programs. Salary and benefits are highly competitive.

Applications and nominations should include a current curriculum vitae and names and addresses of three references. Submit materials to the **Biochemistry Chair Search Committee, c/o Office of the Dean, Emory University School of Medicine, 1440 Clifton Road, N.E., Ste. 321, Atlanta, Georgia 30322, attn. Ms. Linda Townsend**. Applications via email to **ltownsend@medadm.emory.edu** are encouraged. The Search Committee will review applications until the position is filled.

Emory University is an Equal Opportunity/Affirmative Action Employer and encourages the application and nomination of qualified minority and female candidates.

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

The UC Davis School of Medicine, Department of Medical Pharmacology and Toxicology invites applications for three (3) tenure-track faculty positions. The positions will build on ongoing recruitments in the new UC Davis School of Medicine Membrane Biology Program, UC Davis Genome Center, and UC Davis Center for Neuroscience. We seek individuals who use molecular genetic, genomic or proteomic approaches to answer fundamental questions about membrane proteins, including but not limited to ion channels, transporters and receptors, as a basis for identifying new drug targets. Successful candidates will participate in developing an internationally recognized research program bridging pharmacology, genomics, and membrane biology. Faculty members will have access to state-of-the-art core genomics research facilities and small-animal imaging capabilities in the Genome Center.

Priority will be given to candidates at the Assistant or Associate level whose record of innovative research and commitment to teaching demonstrate their potential as leaders in their fields.

The positions require an M.D., Ph.D., or equivalent. They will be open until filled, but for full consideration applications should be complete by January 31, 2003. Applicants should send a curriculum vitae, up to three representative reprints, a synopsis of research interests and plans, a summary of teaching experience/philosophy and should arrange for three to five letters of reference to be sent to: **Dr. Ann C. Bonham, Chair, c/o Office of Research, School of Medicine, University of California, Davis East Health Sciences Drive, Davis, CA 95616-8536.**

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

The European Commission

candidates (m/f) for the post of

RECTOR

od Safety Authority

e scientific advice and support for
direct or indirect impact on food and
stions in the field of animal health and
dependent information on all matters within
its mission also includes the provision of
y in relation to Community legislation, GMOs
addition to having its own specialist personnel,
upported by networks of peer organisations and

achieve the Authority's strategic objectives, day-to-day
and recruitment; • preparation and execution of the budget;
and indirectly to the public in relation to all matters within
; • preparation and implementation of multi-annual and annual
; • facilitate co-operation with the Commission and Member States to
ence between risk assessment risk management and risk communication
; • co-operate with the competent bodies in the Member States, in particular
ing the Advisory Forum; • establish effective contacts with the European Parliament, consumer and producer representatives, processors and other interested parties.

Qualifications and experience required: • a university degree or equivalent giving entitlement to undertake postgraduate studies; • at least 15 years of professional experience (following the award of the University Degree or equivalent) preferably in a field relevant to the mission of the Authority, at least 5 years of which must have been at senior management level; • a good understanding of the EU institutions and policies in the field of food and feed safety, related international activities and other policies relevant to the activities of the Authority; • proven capacity to lead an organisation, at strategic and internal management levels; • capacity to communicate to the public and build good working relationships with all stakeholders; • a thorough knowledge of one of the languages of the EU and a satisfactory knowledge of one other of these languages; • candidates must be nationals of a European Union Member State and must have been born after 01.06.1942.

Independence and declarations of interests: candidates are required to confirm their willingness to make a declaration of their commitment to act independently in the public interest and a declaration of any interests which might be considered prejudicial to their independence.

Appointment and Conditions of Employment: the Executive Director will be appointed by the Management Board on the basis of a list drawn up by the Commission. This call is the basis for the establishment of this list. Candidates should note that the Commission's list may be made public. The appointment will be as a member of the temporary staff, pursuant to Article 2 of the conditions of employment of other servants of the European Communities, for a 5-year renewable term. The grade will be at A2 level.

The final seat of the EFSA has not been decided. Temporarily the EFSA is based in Brussels, Belgium.

The original notice of this vacancy including an application form is published in the Official Journal of the European Communities (C 052 A, 27.02.02) available at web-site ***http://europa.eu.int/eur-lex.***
The application form may also be obtained by e-mail from ***SANCO-EFSA-ED@cec.eu.int*** *or from either of the following web-sites which also give additional information:* ***http://www.efsa.eu.int*** *and* ***http://europa.eu.int/comm/food/fs/efa/index_en.html***

Supporting documents must be submitted at a later stage in the procedure if requested.

Candidates should submit a letter of motivation, a completed application form and a free format CV of maximum three pages.

The European Union takes great care to avoid any form of discrimination and actively encourages applications from women.

Applications must be sent no later than
JOB-VACANCIES-MANAGEMENT
following address:
Administration, Unit Admin A1

Applications sent by express
before

http://europa.eu.int

NATIONAL CANCER INSTITUTE

HIV Drug Resistance Program

The National Cancer Institute is paving the way for new programs and discoveries at its Frederick campus (NCI-Frederick). Under the direction of Dr. John Coffin, the HIV Drug Resistance Program (DRP) is creating a world-class center for retrovirology research in a highly collaborative environment dedicated purely to research with very strong support services. The emphasis of the DRP is on basic and translational research related to HIV genetic diversity and drug resistance.

The DRP is recruiting for a position that will be filled by a Senior Investigator (Senior Biomedical Research Service and/or Medical Officer with potential Physician Special Pays) or Tenure-Track Investigator. The individual must be a self-directed scientist with an M.D., Ph.D., or equivalent degree who will undertake independent, investigator-initiated studies in the area of HIV-host cell interaction; genetic structure and evolution of virus populations; development of new paradigms for drug discovery and development; study of the genetics and pathogenesis of HIV or related viruses; or translation of basic studies into therapeutic strategies. There are opportunities for extensive collaboration within and outside of the NCI community.

A fully equipped laboratory will be provided along with technical support, as well as support for animal studies. Total annual compensation will be commensurate with experience, accomplishments, and education. A detailed description of research interests should be submitted along with a curriculum vitae, bibliography, and five (5) letters of recommendation to: **Ms. Lori Holliday, Administrative Officer, Office of Management, NIH, NCI-Frederick, Building 578, Room 18, Frederick, MD 21702.**

The Search Committee will begin reviewing completed applications after May 7, 2002. For consideration, all applications must be postmarked by April 30, 2002. Applications may also be **faxed** to **(301) 846-6053**. If you need additional information, please call **Ms. Lori Holliday, Search Committee Executive Secretary, at (301) 846-1414.**

The National Cancer Institute Is an Equal Opportunity Employer and Affirmative Action Employer that Values and Fosters Diversity Throughout the Entire Organization

USDA

RESEARCH CHEMIST PHYTONUTRIENTS

The U.S. Department of Agriculture, Agricultural Research Service, Beltsville Human Nutrition Research Center, Phytonutrients Laboratory, is seeking a permanent full-time Research Chemist, GS-12-13 range. Incumbent will conduct personal research to develop analytical methods for phytonutrients and their metabolic products appropriate for quantifying these compounds from biological samples. Incumbent will also participate in team research designed to delineate the metabolism of phytochemicals in humans. A Ph.D. or equivalent is desirable in the physical sciences, life sciences or engineering. Requires 30 semester hours of chemistry, supplemented by courses in mathematics and physics. Incumbent must have a record of independent research and must have demonstrated scholarly achievement, including publications in peer-reviewed journals. Applicants must be U.S. citizens. Salary range, $55,694 to $86,095.

For a copy of announcement **ARS-X2E-2154** and position requirements, visit **www.ars.usda.gov**; **telephone: 301-504-1350**; **e-mail: bjacobs@ars.usda.gov**. Applications must be postmarked by April 29, 2002. Specific questions regarding the position may be directed to **Dr. Beverly Clevidence, 301/504-8396** or **Clevideb@ba.ars.usda.gov**.

USDA/ARS is an Equal Opportunity/Affirmative Action Employer/Provider.

INSTITUT PASTEUR

Post-doctoral position on neural networks genetic specification

A two-year post-doctoral position is immediately available in the Unit of Molecular Embryology (Dept of Neurosciences). The project supervised by Philippe BRÛLET aims to study neural networks, genetic specifications and functioning in mouse developing CNS. Special emphasis will be given to establish the roles of Otx and Emx homeogenes in the functional synaptic organization of the mouse brain. Optical imaging on living embryos and animals will be performed by multiphotons confocal microscopy. Techniques : molecular biology, knock-in and specific mutagenesis in mouse, immunocytochemistry, confocal microscopy.

Fellowship from an E.C contract

Contact address :

Dr Philippe BRÛLET
Unit of Molecular Embryology
Dept of Neurosciences
INSTITUT PASTEUR
25 rue du Dr Roux
75724 PARIS CEDEX 15
Phone : +33 (0) 1 45 68 84 70
Email : **pbrulet@pasteur.fr**

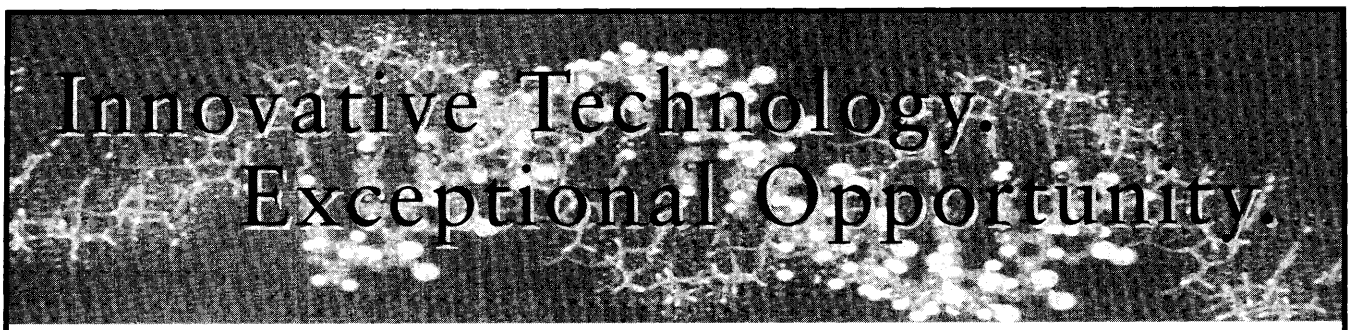
Center for Stem Cell Research Ottawa Health Research Institute

The Ottawa Health Research Institute, affiliated with the University of Ottawa Medical School, is seeking outstanding applicants for seven independent academic research positions as Senior Scientist and Scientist in the new Centre for Stem Cell Research under the direction of Dr. Michael Rudnicki. Areas of research include genomic, molecular and developmental studies of adult stem cells (hematopoietic, neural, myogenic, etc.) and embryonic stem cells addressing such issues as ontogeny, plasticity commitment, differentiation and therapy.

The Ottawa Health Research Institute is the research arm of the Ottawa Hospital and is one of the largest hospital-based research institutes in North America. The OHRI has almost 100 full-time scientists and clinician-scientists in seven research Programs (**www.ohri.ca**).

Successful applicants will be expected to conduct a vigorous program of independent, externally funded research and be involved in graduate and undergraduate teaching. Candidates must have a PhD, MD or equivalent degree and postdoctoral experience demonstrating outstanding achievement in their field. Applicants should forward a CV, copies of representative reprints, statement of research interests, and arrange to have three letters of reference sent to: **Dr. Michael A. Rudnicki, Senior Scientist & Director, Molecular Medicine Program, Ottawa Health Research Institute, 501 Smyth Road, Ottawa, Ontario, Canada K1H 8L6 Email: stemcellresearch@ohri.ca**

In accordance with Canadian immigration regulations, this advertisement is directed in the first instance to Canadian citizens and landed immigrants, however, applications from other nationalities are encouraged.



Amgen, the world's largest independent biotechnology company, is dedicated to improving the lives of patients worldwide by using science and innovation to dramatically improve people's lives. We also have the values, resources, and results you would expect from the world's leading biotechnology company. Our first two products, EPOGEN® (Epoetin alfa) and NEUPOGEN® (Filgrastim), are among the most successful human therapeutics ever launched.

We are currently recruiting for the following positions in our rapidly expanding Small Molecule Drug Discovery division, both in **Thousand Oaks, CA** (conveniently located an hour's drive west of Los Angeles and just inland from the Pacific Ocean), as well as the newly commissioned Cambridge Research Center in **Kendall Square, Cambridge, MA**.

Medicinal Chemistry (BS/MS/PhD - level positions) With a background in organic chemistry, you will design and synthesize potential drug candidates in a multidisciplinary environment. Advanced scientific and technical skills are essential, as is a working knowledge of HPLC, NMR and Mass spectral interpretation. Prior pharmaceutical industry experience is a plus.

Molecular Structure (MS/PhD - level positions) You will have a strong background in all aspects of molecular modeling for small molecule based and structure based drug design as you apply computational techniques to drug discovery. Opportunities in the NMR Facility to support the structural elucidations of small molecule drug candidates are also available.

Small Molecule Analytical (BS/MS/PhD - level positions) You will have a strong working knowledge about developing profiling assays (e.g. affinity, bioanalytical, chemical, and/or physicochemical spectroscopic, separation and or mass spectrometric techniques) to aid in the hit-to-lead process. Additional positions are available in a process-driven team, which operates and maintains Amgen's corporate compound collection of small molecules.

Screening (BS/MS - level positions) As part of the expanding assay development, screening and compound profiling laboratories, you will characterize purified proteins, develop and optimize HTS assays for enzyme inhibition, and characterize small molecules discovered by high throughput screening and medicinal chemistry. This position requires a BS or MS in Biochemistry, Pharmacology or a related field.

Positions Located in Thousand Oaks:

Pharmacokinetics & Drug Metabolism Department - ADME Biology - Research Scientist II/III (PhD level) Responsible for designing, implementing, managing and analyzing scientific research projects in support of small molecule drug discovery and development, you will devise strategies and protocols, supervise laboratory activities, and collaborate with other scientists and external organizations in facilitating biochemical research projects. Requires a PhD in Pharmaceutical Sciences, Pharmacology, Biochemistry or related field and 3+ years of post-doctoral experience. Must have a broad understanding of the biology of ADME processes and the regulation of enzymes and transporters involved in drug disposition. Publication in the field is essential, as are strong communication skills and the ability to motivate others.

Chemical Process Development Engineer (BS - level positions) Responsibilities include process development and scale-up of small molecule active pharmaceutical ingredients, kilo laboratory operation, project management, tech transfer support, DOE, safety analysis, and equipment troubleshooting and design. Must have a BS in Chemical Engineering and 2+ years experience in the pharmaceutical industry or related field.

Senior Biostatistician (BS/MS/PhD - level position) Providing expertise on the appropriate use of clustering algorithms, self-organizing maps, principle-component analysis, latent class models, and other data analysis approaches, you will develop and validate algorithms for removing and/or normalizing unwanted variation. Requires a PhD or equivalent experience and thorough knowledge of microarray data analysis. Must have a background in design and analysis of hypothesis-driven experimentation and familiarity with high-content technologies is a plus.

Chemical Process Development (MS/PhD - level positions) You will conduct research and development on new chemical entities, scaling up from the laboratory to the manufacturing level. Requires an MS or PhD in Organic Chemistry, 3+ years experience in chemical process research and development in the pharmaceutical industry and a thorough understanding of synthetic organic chemistry.

For immediate consideration, forward your resume, including **(Ad Code 861)** to: **tevarts@amgen.com**; or by mail at: **(Ad Code 861) Amgen Staffing, P.O. Box 2569, Thousand Oaks, CA 91319-2569**. For additional information on Amgen, please visit our website at **www.amgen.com**.

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EOE/AA Employer M/F/D/V

www.amgen.com

Harvard University Center for Systems Neuroscience: Faculty Positions

The Faculty of Arts and Sciences at Harvard University is creating a Center for Systems Neuroscience to bring together scientists involved in research on the nervous system, from neurons and neural circuits to behavior and cognition. The Center will foster interactions across disciplinary boundaries, with faculty from a spectrum of academic departments housed in common research space and connections reaching out to departments and facilities across the University.

It is expected that ten or more new neuroscience faculty will be appointed over the course of the next few years. Each will hold an academic appointment in one or two of the participating departments: Psychology, Molecular and Cellular Biology, Organismic and Evolutionary Biology, Physics, Chemistry and Chemical Biology, the Division of Engineering and Applied Sciences (which includes Applied Mathematics and Computer Science). Joint appointments with relevant Medical School Departments, such as Neurobiology, are also possible. Links to other new centers at Harvard including the Brain Imaging Center at the Medical School, the Center for Genomics, the Center for Imaging and Mesoscale Structures, and the Institute of Chemistry and Cell Biology, will provide resources, facilities, and opportunities for collaborative research and technology development.

We invite applications for faculty positions at the rank of assistant, associate (non-tenured), and full professor. Because of the opportunity for synergistic appointments, we encourage applicants to inform us of other exceptional candidates including present or potential collaborators.

Please send a cover letter, curriculum vitae and copies of a few publications to: **Neuroscience Search Committee, c/o Department of Molecular and Cellular Biology, 7 Divinity Avenue, Room 169, Harvard University, Cambridge MA 02138.**

Please also arrange to have three letters of recommendation sent directly to the above address.

Harvard is an Affirmative Action/Equal Opportunity Employer. Applications from, or nominations of, women and minority candidates are especially encouraged.

Hui Konohiki Program in culturally based resource management

Five-, nine-month, tenure-track positions as assistant or associate professors are available as part of the *Hui Konohiki* Program. The program brings an Hawaiian centered world view to resource management. It recognizes that ancient wisdom has been captured in Hawaiian language and practices and blends this with modern understandings from biological sciences. The purpose of this program is to train a new generation of leaders, who, like the *konohiki* of old, hold an integrated view of entire watersheds from mountains to reefs, and now can blend scientific and cultural practices into the decision making process.

This is a team program in both research and teaching with participants expected to develop combined and individual academically rigorous programs that include obtaining extramural support. Researchers may focus on any problem in their area of expertise with at least half of their effort aimed at the combined research needs of the *Hui Konohiki* Program. Significant opportunities exist for those interested in rare species.

The positions allocated to this program include: Applied Ethnobiology, Natural Resource Biology, Marine Resource Biology, and Hawaiian Resources Management. In addition, an Information and Communication Science position will support the integration effort and promote distance learning. Although the heart of the program resides within an understanding of Hawaiian world views, previous experience with Hawaiian culture and language is not a prerequisite for serious consideration.

Interested scholars should visit **www.konohiki.hawaii.edu.** Information may be requested via **e-mail konohiki@hawaii.edu** or **fax (808) 973-0988.**

The University of Hawai'i is an Affirmative Action/Equal Opportunity Employer. Women and members of Minority Groups are strongly encouraged to apply.

THE UNIVERSITY OF IOWA

University of Iowa Postdoctoral Research Scholar (3 positions available)

Analysis of animal cell motility and chemotaxis using molecular genetics and computer technologies in the Keck Dynamic Imaging Analysis Facility. Candidates must have a Ph.D. with a strong background in microscopy, cell biology and molecular techniques.

If interested, please send a brief description of research experience and interests, curriculum vitae with a list of publications, and three reference letters to:

Dr. David R. Soll
W. M. Keck Dynamic Image Analysis Facility
300 Biology Building East
Department of Biological Sciences
Iowa City, IA 52242
Email: david-soll@uiowa.edu

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

Science's **STKE**

SIGNAL TRANSDUCTION KNOWLEDGE ENVIRONMENT
a product of *Science* and Stanford University Libraries

ASSOCIATE EDITOR

An **Associate Editor** position is available with *Science's* STKE (Signal Transduction Knowledge Environment) Web publication.

This stimulating and challenging post puts you on the leading edge of both signaling research and the electronic revolution in scientific publishing.

The chosen candidate will join the STKE's editorial team of Ph.D. scientists and participate in a range of duties. Editorial duties include solicitation, review, and editing of Perspectives, Reviews, and Protocols and writing short, but highly informative, summaries of noteworthy research papers for This Week in Signal Transduction. Development projects include creation of features to promote the Knowledge Environment's primary goal of enhancing efficient access to scientific information, including the Connections Map database and educational resources.

We require a Ph.D. and postdoctoral experience in a related aspect of biological science, broad knowledge of signal transduction, a strong publication record in peer-reviewed journals, outstanding ability in written and oral communication, and commitment to excellence in electronic publishing. Understanding of bioinformatics and HTML is desirable. Previous editorial experience is helpful but not required.

Please send your curriculum vitae and a cover letter explaining your qualifications and interest in the position to:

Ms. Dawn Graf
American Association for the Advancement of Science
Human Resources Department, Suite #100
1200 New York Avenue, N.W.
Washington, DC 20005

EOE/Nonsmoking work environment

The Wellcome Trust Sanger Institute

Faculty Positions

£Competitive plus excellent resources **Cambridge, UK**

The Wellcome Trust Sanger Institute (formerly The Sanger Centre), is at the forefront of experimental and computational genome research. We have strengths in genome sequencing, high throughput systems, informatics and analysis of gene function using genetic approaches in humans and a variety of model organisms. The Wellcome Trust has recently awarded £300 million to the Sanger Institute to support our new biological/genetics research direction as well as our existing programmes over the next five years, plus £65 million for IT infrastructure.

Applications are invited for full time faculty positions at the rank of *Investigator*, *Senior Investigator* and *Principal Investigator* (http://www.sanger.ac.uk/faculty/positions.shtml). Individuals with backgrounds in vertebrate genetics, microbial genetics or informatics are particularly urged to apply. Successful candidates will be expected to establish and maintain independent and internationally recognised research programmes. A few positions are also available where we are seeking candidates to direct programmes aimed at developing specific genome resources and infrastructure (http://www.sanger.ac.uk/faculty/specific.shtml).

The Sanger Institute is committed to provide a level of support so that there is no impediment to performing high quality and productive science. This includes access to our infrastructure as well as unencumbered support commensurate with the rank of appointment (http://www.sanger.ac.uk/faculty/descriptions.shtml).

Applicants are requested to send curriculum vitae with a full publication list by 31st March 2002. You should also provide a two page description summarising your research accomplishments to date and a three page plan of your future research goals and strategies indicating how these fit with, or make use of Sanger Institute programmes and infrastructure. Candidates interested in existing internal programmes should focus their future plans in the context of a specific programme. All candidates must provide three letters of recommendation. Please arrange to have these letters and your application sent to:

Allan Bradley, Faculty Search Committee Chair, The Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SA, ENGLAND. E.mail: abradley@sanger.ac.uk FAX: +44 (0) 1223 494714

University of Heidelberg

Interdisciplinary Center for Neurosciences
Department of Clinical Neurobiology

Group Leader

The Department of Clinical Neurobiology seeks an experienced electrophysiologist to head an independent research group. The successful applicant will have experience in slice patch-clamp recording and possibly in anatomical techniques aiding in cellular analysis and circuit reconstruction.

There is a broad base of neuroscience research in Heidelberg, of which the three departments of the IZN (Clinical Neurobiology, Neurobiology and Anatomy) are prominent. For details of the IZN see website www.izn.uni-hd.de. Research in the Department of Clinical Neurobiology concerns the contribution of ion channels to network behaviour, with an emphasis on transgenic models. Although the successful candidate will pursue an independent research programme, the Heidelberg campus offers many collaborative opportunities including the possibility of participating in the SFB 488 programme.

The annual funds available for this position comprise 199000 Euro for salaries and consumables. Start-up funds for three electrophysiological set-ups are guaranteed. In addition the candidate and members of his/her group can use all equipment in the department. The department was last year fully refurbished with state-of-the-art equipment and facilities for molecular biology and anatomy research. The position will be limited to 5 years.

Salary is according to BAT. The University of Heidelberg wishes to increase its proportion of female scientists. Qualified women are encouraged to apply. Priority will be given to physically handicapped candidates of equal qualification.

Potential applicants are welcome to contact Prof. Hannah Monyer to discuss the position informally. Please send full applications, with CV and publications and an outline of future research plans by April 1, 2002, to **Ms. Laura Winkel, Clinical Neurobiology, Im Neuenheimer Feld 364, D-69120 Heidelberg.** e-mail: cnb@urz.uni-hd.de, Tel.: +49-6221-562401, Fax: +49-6221-561397.

POSTDOCTORAL POSITION

Genome Technology Branch

National Human Genome Research Institute

National Institutes of Health

A Postdoctoral research position is available immediately for an individual interested in vertebrate genetics and genome analysis at the National Human Genome Research Institute (NHGRI).

Establishing technologies for using microarrays as a tool to study vertebrate development. This position is a collaboration between two labs in the NHGRI and will utilize a recently developed and comprehensive microarray of zebrafish genes to study aspects of vertebrate development on a genome-wide scale. Particular research areas include establishment of the blood lineages and development of the vertebrate ear and hearing.

The National Human Genome Research Institute at the National Institutes of Health in Bethesda provides an exciting scientific environment in one of the largest biomedical research facilities in the world.

Candidates should possess an MD and/or PhD and have less than five years of postdoctoral experience. Please send a letter, CV, and three letters of reference to: **Dr. Shawn Burgess c/o Mr. Sean Ryan, NHGRI/NIH, 50 South Dr., Bldg. 50, Rm. 5531, Bethesda, MD 20892-8004 (or dgsapply@nhgri.nih.gov).**

The NIH is an Equal Opportunity Employer and applications by women and minorities are strongly encouraged.

Principal Investigator
Dermatology Branch, Center for Cancer Research (CCR)
National Cancer Institute

The Dermatology Branch CCR, NCI seeks an energetic and accomplished, tenure track or tenure eligible Principal Investigator to join a group of colleagues who are committed to excellence in research, training and patient care. The group is currently comprised of seven physicians who are engaged in laboratory- and clinic-based research. The successful candidate will establish an independent laboratory that conducts high quality research in an important area of contemporary skin biology. It is anticipated that the area of emphasis will complement those that are already represented in the Branch and be relevant to the diagnosis or care of patients with cancer. Candidates must be Board-certified in Dermatology, hold a valid state medical license and be eligible for NIH Clinical Center privileges. Ideal candidates will, in addition, have a commitment to, and active interest in, clinical medicine and must be willing to contribute to the development of a Branch clinical research program. Research activities will be fully supported. Compensation and other resources are negotiable and dependent on qualifications. Loan repayment programs may be available for qualified applicants. Applicants should send a letter of interest and curriculum vitae to: **Dr. Lee Helman, Chair, Dermatology Branch Principal Investigator Search Committee, c/o Ms. Sallie Baird, Dermatology Branch, CCR, NCI, Building 10, Room 12N238, Bethesda, MD 20892-1908.** Applications must be postmarked by May 30, 2002.

The National Cancer Institute is an Equal Opportunity Employer.

Senior Scientist

Collateral Cardiomics is the newly established functional genomics division of Collateral Therapeutics, a leader in the discovery and development of innovative non-surgical gene therapy products for the treatment of cardiovascular diseases. Collateral Cardiomics' Assay Development Group is seeking a Senior Scientist to successfully contribute in a dynamic team environment.

The ideal candidate will have a PhD in Molecular Biology or Biochemistry, 3-5 years postdoctoral experience, and a strong background in molecular biology and viral vector construction. Proactive leadership and team capabilities, ability to work creatively and independently, and excellent written and oral communication skills are essential. Experience with robot-mediated high throughput screening is a plus.

Collateral Therapeutics, Inc. offers a competitive compensation and benefits portfolio. Mail c.v./resume to: Collateral Therapeutics, Inc., Employment Department #21005-02A, 11622 El Camino Real, San Diego, CA 92130; fax to: (858) 794-3440; or e-mail to resumes@collateralthx.com. EOE.

COLLATERAL THERAPEUTICS

Roche

Pharmaceuticals

Scientist - Genetics

Who we are

As part of F. Hoffmann-La Roche's global genetics/genomics technology platform, our group is responsible for developing new high-throughput DNA sequencing, SNP discovery and SNP screening technologies, focusing on pharmacogenetic studies and the identification of genes involved in common, complex diseases.

The position

You will be responsible for building and leading a team whose task will be to integrate the detection of polymorphisms into the process of discovering and characterising genes implicated in common diseases. Your responsibilities will include the selection of markers for association and linkage disequilibrium studies and managing a genomic production team.

Who you are

You hold a PhD and have with a solid background in human genetics, population genetics and/or genetic epidemiology. Familiarity with bioinformatic tools used to mine large data sets and statistical genetics would be an advantage. You have a strong interest in interdisciplinary teamwork and are fluent in English.

Who to contact

If the above profile fits your background and experience and you are interested in this challenging position, please send your application, with full supporting documentation, to: F. Hoffmann-La Roche Ltd, Mr Werner Aschwanden, PSPB, Building 52/205, P.O. Box, CH-4070 Basel, quoting reference: As5011.

FACULTY POSITION
TENURE-TRACK ASSISTANT OR ASSOCIATE PROFESSOR

The Department of Microbiology and Immunology at the Uniformed Services University of the Health Sciences invites applications from Immunologists for a full-time, tenure-track position at the Assistant or Associate Professor level. Candidates must possess a Ph.D. degree or its equivalent, postdoctoral experience, and a demonstrated record of outstanding research productivity in cellular or molecular immunology. The applicants are expected to establish and maintain a vigorous and well-funded research program related to the host response to infectious agents. The expertise of the successful candidate should complement the research program of the existing Immunologists at the University, whose interests include immunology of infectious diseases, innate immunity, dendritic cell function, effector T and B cell differentiation, and vaccine development. In addition, the successful candidate is expected to provide excellent instruction to medical students and to mentor Doctoral students in the interdisciplinary graduate programs.

The Department of Microbiology and Immunology provides an outstanding research environment with accessibility to core facilities, state-of-the-art equipment, and considerable opportunities available for collaboration with a collegial faculty. The University is located in a superb location for biomedical research in close proximity to other government and biotechnology research centers.

William C. Gause, Ph.D.
Chair, Search Committee
Department of Microbiology and Immunology
Uniformed Services University
of the Health Sciences
4301 Jones Bridge Road
Bethesda, MD 20814

The deadline for submission of applications is April 19, 2002.

ASSISTANT RESEARCH PROFESSOR
HIV Molecular Biology

The Department of Microbiology and Tropical Medicine at The George Washington University is seeking applicants for a position of Assistant Research Professor. We are interested in applicants whose research has direct clinical implications and will involve studies of critical events in HIV replication at the molecular level. Experience with analysis of HIV replication in macrophages and dendritic cells is preferred. The applicant is expected to develop an active, externally funded research program that will complement ongoing HIV studies in the Department. Review of application submissions to begin April 1, 2002, and continue until position is filled. Send curriculum vitae and a statement of research plans to: **Professor Michael Bukrinsky, Vice Chairman, Department of Microbiology and Tropical Medicine, The GWU, Ross Hall, Room 734, 2300 I Street, N.W., Washington, DC 20037**. *The George Washington University is an Equal Opportunity/Affirmative Action Employer.*

PROFESSOR AND HEAD
Department of Anatomy, Physiology, and Pharmacology
College of Veterinary Medicine
Auburn University

The College of Veterinary Medicine, Auburn University, invites applications and nominations for the position of Professor and Head of the Department of Anatomy, Physiology, and Pharmacology. Review of applications will begin May 1, 2002, and continue until a candidate is recommended for appointment; the position is available July 1, 2002. For details, please see **website: http://www.vetmed.auburn.edu/#jobs**. *Auburn University is an Affirmative Action/Equal Employment Opportunity Employer and Educational Institution. Minorities and women are encouraged to apply.*

POSITIONS OPEN

The Integrated Science and Technology (IST) Department at Marshall University is seeking a **FULL-TIME, TENURE-TRACK FACULTY MEMBER** in biotechnology to initiate/lead cross-disciplinary instructional and research collaborations involving the basic and biomedical sciences in the University's College of Science and School of Medicine. IST is a multidisciplinary department that emphasizes excellence in undergraduate education, active learning, and a challenging curriculum, providing each student with a meaningful, practical, problem-solving experience. Use of state-of-the-art computational facilities for modeling and information processing is a central feature of a curriculum designed to develop students' collaborative skills and ability to be an effective member of a problem-solving team. The successful applicant will have innovative and creative proposals for teaching and research collaborations with one or more of the following disciplines as well as a sound approach to implementing these ideas: forensic science, human genetics, biomedical science, laboratory automation, and information technology. A Ph.D. in a related discipline is required and previous experience as an industrial and/or governmental Scientist is desirable.

Review of applications will begin March 30, 2002, and will continue until the position is filled. The appointment will be effective August 2002. Candidates must send a letter of application, a current résumé, statement of teaching philosophy, and three letters of reference to:

Dr. Elizabeth Murray, Chair
IST Biotechnology Search Committee
Marshall University
One John Marshall Drive
Huntington, WV 25755
Telephone: 304-696-6498; FAX: 304-696-3243
E-mail: murraye@marshall.edu

ASSISTANT PROFESSOR
Biology

Gannon, a Catholic university located in Erie, Pennsylvania, invites applications for a nine-month, tenure-track faculty position at the level of Assistant Professor in biology to begin August 25, 2002. The Biology Department is seeking a Microbiologist with a strong background in molecular biology and whose primary teaching responsibilities will include general microbiology, clinical microbiology, and aquatic microbiology. Required qualifications include an earned Ph.D. in biological sciences, training and ability to teach courses associated with this position, and to direct student research. Successful teaching experience at the college level is preferred. To apply, send a cover letter, copies of official transcripts, teaching philosophy, curriculum vitae and research interest, and three letters of recommendation to: **Gannon University, Biology Search, Human Resources Department, 109 University Square, Erie, PA 16541. FAX: 814-871-7514; e-mail: hrdept@gannon.edu**. Review of applications will begin on March 30, 2002. This position will remain open until the vacancy has been filled. Inquiries or questions may be directed to: **Professor David J. Gustafson, Chairperson of the Department of Biology; e-mail: gustafso002@gannon.edu**. For more information about Gannon, visit our **website: http://www.gannon.edu**. *Gannon University is an Affirmative Action/Equal Opportunity Employer.*

PROFESSOR AND HEAD, Department of Plant Science, College of Agriculture and Natural Resources, University of Connecticut, Storrs. For full position announcement, visit **website: http://www.canr.uconn.edu/plsci/search.html**. Ten-month position requiring Ph.D. in plant science or closely related field and a distinguished record of teaching, research, and/or extension. Send curriculum vitae and names and contact information of three references to: **Department Head Search, University of Connecticut, 1376 Storrs Road, Unit 4134, Storrs, CT 06269-4134. Telephone: 860-486-1987; e-mail: plschead@canr.uconn.edu**. *University of Connecticut actively solicits applications from minorities, women, and people with disabilities.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSORS of veterinary anatomy and veterinary physiology, Department of Biomedical Sciences, College of Veterinary Medicine, Oregon State University, invites applications for two nine-month, full-time, tenure-track positions in veterinary morphologic and functional sciences. These positions are funded by education and general funds. Salary is commensurate with experience and qualifications. Applicants should have an advanced degree, Ph.D., or equivalent in an area related to anatomy or physiology, and teaching experience in these disciplines is desired. A D.V.M. degree is also preferred. The main responsibilities will be the teaching of anatomy/histology or physiology to D.V.M. program students. Candidates will be expected to develop a strong, extramurally funded research program with a focus on important issues in animal biology. Applications should include (1) curriculum vitae (with e-mail address); (2) letter of interest addressing the qualifications, a statement of teaching experience/interests, and a statement of current and proposed research interests; and (3) names, addresses (postal and e-mail), and telephone numbers of at least three professional references. Candidates should arrange to have reference letters mailed directly to the **Search Committee Chair**. All other materials should be sent to: **Ms. Tamara Jennings, OSU-CVM, 105 Magruder Hall, Corvallis, OR 97331-4802. FAX: 541-737-0502; e-mail: tammy.jennings@oregonstate.edu**. For full consideration, applications must be received by April 30, 2002. Letters of reference and questions about the position can be directed to: **Dr. Beth Valentine, Search Committee Chair, OSU-CVM, 105 Magruder Hall, Corvallis, OR 97331-4802. Telephone: 541-737-5061; e-mail: beth.valentine@oregonstate.edu**. For review of the full position announcement, refer to our **website: http:// www.osu.orst.edu/jobs**. *OSU is an Equal Employment Opportunity/Affirmative Action Employer and has a policy of being responsive to the needs of dual-career couples.*

FACULTY POSITION
(ASSISTANT/ASSOCIATE PROFESSOR)
Department of Cell Biology and Neuroscience
University of South Alabama
College of Medicine

Applications are invited for a tenure-track faculty position. Preference will be given to applicants with broad interests in the cellular and molecular aspects of neuroscience or cancer biology. Applicants should have a Ph.D. or M.D. degree and appropriate postdoctoral training. The successful applicant is expected to establish an active, extramurally funded research program and to participate in the teaching of basic sciences to medical and graduate students. Of particular interest are applicants who can contribute to the teaching of either gross anatomy or neuroanatomy. For more information about the Department, visit our **website: http://southmed.usouthal.edu/com/scb**.

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

Dr. Glenn L. Wilson
Department of Cell Biology and Neuroscience
University of South Alabama
307 University Boulevard, MSB 1201
Mobile, AL 36688-0002

For full consideration, applications should be received by April 15, 2002. *The University of South Alabama is an Equal Opportunity/Affirmative Action Employer.*

MICROBIOLOGIST. ASSISTANT PROFESSOR, tenure track. Ph.D. required. Environmental microbiology preferred. Graduate and undergraduate teaching and research at Columbus State University, Columbus, Georgia. Graduate program in environmental science. For details, see department **website: http://bio.colstate.edu** or apply directly to **e-mail: cleveland_art@colstate.edu**. *CSU, an Affirmative Action/Equal Opportunity Employer, is committed to diversity and Equality in Education and Employment.*

Staff Scientist in Membrane Biology

The Gene Therapy and Therapeutics Branch, National Institute of Dental and Craniofacial Research (NIDCR), NIH is searching for a Staff Scientist for its Membrane Biology Section. Candidates should have a Ph.D., D.D.S., M.D. or equivalent with at least three years of postdoctoral training, broad experience with membrane proteins, and a strong publication record. Experience with molecular biology, structural biology and/or bioinformatics is also highly desirable. The successful candidate will conduct directed research on membrane protein structure, function and biogenesis.

For more information regarding this position please contact **Dr. R. James Turner, Chief Membrane Biology Section, GTTB, NIDCR (301) 402-1060** or **rjturner@nih.gov**

To apply please send a copy of your curriculum vitae, a one-two page summary of your current research interests, and names and addresses of three references no later than April 30, 2002 to:

Dr R. James Turner
Bldg. 10, Rm. 1A01
10 Center Drive MSC 1190
National Institutes of Health
Bethesda MD 20892-1190

NIH is an Equal Opportunity Employer

RESEARCH BIOLOGIST National Wildlife Research Center United States Department of Agriculture

The National Wildlife Research Center is soliciting applications for a scientist with training in sensory biology, animal behavior or wildlife biology. The Research Biologist position, GS-11, is a two-year term appointment, with an option for an additional two-year reappointment. Salary is commensurate with experience: $45,285 - $58,867 per year. Candidates must be U.S. citizens. The incumbent will plan and conduct research characterizing principles and agents useful for masking sensory attributes of wildlife vaccines, chemosterilants, and toxicants. The duty station is at the Monell Chemical Senses Center in Philadelphia. The incumbent is expected to establish collaborative research with Center staff.

For research information, contact: **Dr. Larry Clark; Telephone: (907) 266-6137**. Information about Monell can be obtained at: **http://www.monell.org**. Candidates must request a copy of **Vacancy Announcement 24-97-515** by either calling **Telephone: 612-370-2381**; or website: **http://www.aphis.usda.gov/ws/nwrc** in order to address specific information outlined in the Vacancy Announcement. Applications must be postmarked by April 08, 2002.

USDA/NWRC is an Equal Opportunity Provider and Employer.

EPA United States Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is seeking qualified candidates to fill the positions of **Supervisory Ecologist, GS-0408-14 and Supervisory Biologist/Physical Scientist, GS-0401 / 1301-14**.

The Supervisory Ecologist will serve as Branch Chief, Coastal Ecology Branch (CEB), at the National Health and Environmental Effects Research Laboratory's (NHEERL) Gulf Ecology Division (GED) in Gulf Breeze, Florida. The incumbent will report to the Division Director and be responsible for providing technical leadership, guidance, and direction to an ecological research program focused on estuarine ecology, coastal ecosystem processes, monitoring and assessment, and ecological indicators directly related to, and in support of, research programs conducted by the Division and NHEERL. The incumbent will be responsible for research planning, development, implementation, evaluation, and reporting of laboratory and field research projects. Research areas include development and validation of diagnostic methods to determine ecological effects of stressors at the population, community, and ecosystem and watershed scales, modeling ecosystems to predict resiliency, and monitoring the long-term ecological condition of near-coastal systems. The incumbent will be responsible for quality assurance in support of the Branch research program, as well as technical assistance to Federal, State, and private organizations as appropriate. The ideal candidate will have strong technical skills in coastal ecology and modeling, as well as strong research team leadership skills.

The **Supervisory Biologist/Physical Scientist** will serve as Branch Chief, Molecular Ecology Branch (MEB), at NHEERL's Gulf Ecology Division (GED) in Gulf Breeze, Florida. The incumbent will report to the Division Director and be responsible for providing technical leadership, guidance, and direction to an ecological research program focused on characterizing the responses of organisms, populations, and communities in coastal ecosystems impacted by natural and anthropogenic stressors. The incumbent will be responsible for research planning, development, implementation, evaluation, and reporting of laboratory and field research projects. Research areas include development of nutrient load/dissolved oxygen relationships for coastal receiving waters, relationships between submerged aquatic vegetation (SAV) loss and nutrient loading, and identification of nutrient loading thresholds causing shifts in food web structure and processes. The incumbent will be responsible for quality assurance in support of the Branch research program, as well as technical assistance to Federal, State, and private organizations as appropriate. The ideal candidate will have strong technical skills in ecological dynamics of estuarine systems, with particular emphasis on nutrient dynamics, as well as strong research team leadership skills.

These are permanent, full-time positions. U.S. citizenship is required and candidates must meet U.S. Office of Personnel Management qualification requirements including specific educational coursework. Candidates should have the required education and/or experience as described in the announcements referenced below. Salary ranges from $76,271 to $99,150 and is commensurate with qualifications. The selected candidates will be eligible for a full benefits package, including relocation expenses, health insurance, life insurance, retirement and vacation and sick leave.

HOW TO APPLY: Vacancy announcements and application instructions are posted on the U.S. Office of Personnel Management's (OPM's) web site at **http://www.usajobs.opm.gov** and on the EPA vacancy web site at **http://www.epa.gov/ezhire** as of **January 14, 2002** under the following announcement numbers: **Supervisory Ecologist - RTP-DE-2002-0061** and **RTP-MP-2002-0072**; **Supervisory Biologist/Physical Scientist - RTP-DE-2002-0065, RTP-MP-2002-0074**, and **RTP-MP-2002-0075**. The application deadline is **April 12, 2002**. **For further information, contact the EPA Human Resources Management Division at (800) 433-9633, and reference "GED Branch Chief Positions."**

The U.S. EPA is an Equal Opportunity Employer.

POSITIONS OPEN

PARASITOLOGY/MICROBIOLOGY

The Department of Biological Sciences at Old Dominion University, a state-assisted Doctoral research-extensive institution, invites applications for a **RESEARCH ASSISTANT PROFESSOR** or **INSTRUCTOR** to teach courses in parasitology, microbiology, and other courses in the candidate's specialty. Candidates considered for the Research Assistant Professor will be expected to establish a strong, externally funded research program and may supplement their salary from external sources. Teaching duties will be adjusted commensurate with the candidate's externally funded research obligations. Opportunities for supervising graduate students are afforded through participation in our M.S. and Ph.D. programs in the ecological and biomedical sciences. The use of molecular methods in the candidate's research and teaching is strongly encouraged. A Ph.D. in a biological science or related discipline is required for Research Assistant Professor; a Master's in a biological science or related discipline is required for Instructor. Effective communication skills are required. Prior teaching experience preferred. Please submit curriculum vitae, a brief statement of teaching and research goals, and the names and contact information of three references to: **Chair, Parasitology/Microbiology Search Committee, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23529-0266**. Inquiries may be sent to **e-mail: dsonensh@odu.edu**. Review of application will begin April 1, 2002, and continue until the position is filled. Position available: August 2002. *Old Dominion University is an Affirmative Action/Equal Opportunity Employer and requires compliance with the Immigration Reform and Control Act of 1986.*

FACULTY POSITION
THE GAZES INSTITUTE
BIOCHEMISTRY/CELL BIOLOGY
Medical University of South Carolina (MUSC)

The Gazes Cardiac Research Institute, in conjunction with the Departments of Biochemistry and Cell Biology at the Medical University of South Carolina, invites applications for a full-time, tenure-track appointment at the level of **ASSISTANT PROFESSOR**. Applicants must hold an M.D. and/or Ph.D. and have had at least two years of postdoctoral training with a strong background in cell/molecular biology. Successful applicants should have research interests that complement the Gazes research program (signal transduction, translational and transcriptional regulation, intracellular trafficking, and protein structure-function relationships). Start-up funds, core facilities, and abundant space are available. Application review begins immediately. Interested applicants should contact and/or send their curriculum vitae and a description of their research interests to: **Mr. Thomas Gallien, Gazes Search Administrator, P.O. Box 250773, Medical University of South Carolina, Charleston, SC 29425. E-mail: gallient@musc.edu; Telephone: 843-876-5447; FAX: 843-876-5068**. *MUSC is an Affirmative Action/Equal Opportunity Employer.*

OPHTHALMOLOGY AND VISUAL SCIENCE
University of Texas Medical School at Houston

Applications are invited for one or two tenure-track faculty positions, probably at the **ASSISTANT PROFESSOR** level, to join a team working on the organization of the mammalian retina. We seek candidates holding or with strong potential to obtain funding from the National Eye Institute and with novel physiological, molecular, or genetic approaches to the structure and function of the retina. A competitive salary start-up package will be provided. Send applications with curriculum vitae; research outline; and the names of three references by March 31, 2002, to: **Dr. Stephen C. Massey, Research Director, Ophthalmology and Visual Science, University of Texas Medical School at Houston, 6431 Fannin, Suite 7.024, Houston TX 77030. E-mail: steve.massey@uth.tmc.edu**. *The University of Texas is an Equal Opportunity/Affirmative Action Employer.*

POSITION OPEN
Director, U.S. Geological Survey
Great Lakes Science Center

The U.S. Geological Survey's Great Lakes Science Center in Ann Arbor, Michigan, invites applications for its Center Director. He/she is responsible for managing a broad, multidisciplinary program of biological research, monitoring, and information management on the Great Lakes and for enhancing and supporting natural resource partnerships between the Center and states, tribes, other federal agencies, and private groups. The Center consists of the main laboratory in Ann Arbor, Michigan; eight field stations; and a fleet of large research vessels with research emphasis in fisheries biology and ecology, fish community stock assessment, coastal and wetland ecology, predator-prey relationships, and nonindigenous species biology. Applicants require extensive professional knowledge of biology and ecology, skill in supervising professional and administrative staff, and ability in managing a federal research facility. *This announcement is open to all qualified U.S. citizens.* Salary: $94,728 to $123,149. Closing date: Applications must be submitted (online only) by midnight Eastern Standard Time Wednesday, March 30, 2002. View the full text vacancy announcement or apply for this position at **website: http://www.usgs.gov/ohr/oars**. For further information, contact: **USGS Eastern Regional Personnel Office; Telephone: 703-648-4402; e-mail: asmith@usgs.gov**. *The Federal Government is an Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR
Emory University

The Division of Rheumatology and Immunology in the Department of Pediatrics at Emory University is seeking a faculty member at the Assistant or Associate Professor level to fill a position in basic research. We have recently received an award supporting studies of immunological and genetic mechanisms involved in the pathogenesis of systematic lupus erythematosus. We have an opening for an individual at the M.D., Ph.D., or M.D./Ph.D. level to engage in these studies in close collaboration with other Investigators in our institution.

Emory and the Department of Pediatrics are committed to a broad expansion of research initiatives. The University has an excellent cadre of immunological Investigators in the departments of medicine, pediatrics, pathology, surgery, and the vaccine center as well in collaborating institutions such as the adjacent CDC. This position will be an excellent opportunity for an energetic and productive individual to join us during an exciting phase of academic growth and an expansion in Emory's overall commitment to the field of immunology. Please direct curriculum vitae and inquiries to: **Larry B. Vogler, M.D., Division Director, Pediatric Rheumatology and Immunology, 2040 Ridgewood Drive, Atlanta, GA 30322. Telephone: 404-727-4406; FAX: 404-727-3757; e-mail: larry_vogler@oz.ped.emory.edu**. *Emory University is an Affirmative Action/Equal Opportunity Employer.*

PRINCIPAL/SENIOR SCIENTIST (CHEMIST)
PRINCIPAL RESEARCH CHEMIST

Waters Corporation is the world's leading supplier of HPLC instrumentation and consumables as well as thermal analysis and mass spectrometry products. We currently have an opening for a Principal/Senior Scientist (Chemist) and a Principal Research Chemist. Source Codes: XJXSS (for Senior Scientist) and XJXRC (for Research Chemist).

Please e-mail your résumé including salary requirements and appropriate Source Code to: **e-mail: waters@alexus.com; FAX: 877-591-8585. Waters Corporation, 34 Maple Street, Milford, MA 01757**. *Equal Opportunity Employer.*

TENURE-TRACK POSITION
QUANTITATIVE BIOLOGY
Department of Developmental and Cell Biology
University of California, Irvine

The Department of Developmental and Cell Biology at the University of California at Irvine invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level in the general area of quantitative biology including (but not limited to) cell cycle control, gene regulatory networks, signaling networks, cytoskeletal dynamics, organelle assembly, and protein sorting. Appropriate methodologies include (but are not limited to) optical and microscopic examination, theory or simulation combined with experimentation, functional genomics, proteomics, kinetics, and other quantitative approaches to complex systems. The successful candidate must possess a Ph.D. (or equivalent) and will be expected to establish a vigorous research program and participate effectively in teaching at the undergraduate and graduate levels. This position is part of a large, campuswide initiative that emphasizes the interface between the biological and biomedical sciences and the physical sciences and engineering. Candidates should send complete curriculum vitae, most recent publications, statement of research interests, and the names and addresses of three references to:

Ms. Larrie Adanza
Quantitative Biology Search Committee
Department of Developmental and Cell Biology
University of California
Irvine, CA 92697-2300

We will begin reviewing applications on April 2002 but the position will remain open until filled. Please visit our **website http://devcell.bio.uci.edu**. *The University of California, Irvine, has an active career partner program and an NSF ADVANCE Program for Gender Equity.*

ECOLOGICAL OR EVOLUTIONARY BIOLOGIST

The Department of Biological Sciences at Old Dominion University, a state-assisted Doctoral research-extensive institution, invites applications for a tenure-track position in ecological or evolutionary biology at the **ASSISTANT PROFESSOR** level. Area of specialization is open but we especially encourage applicants who employ quantitative or molecular techniques to study questions in physiological ecology or population genetics. We seek an individual who will be active in our undergraduate, M.S., and Ph.D. programs and will complement existing strengths within our Department and College. Applicants should have good communication skills, a Ph.D. in the biological sciences, and an established track record or strong potential for attracting extramural support; postdoctoral experience is preferred. Please submit curriculum vitae; statement of research and teaching interests; and the names, telephone numbers, and the addresses (postal and e-mail) of three references to: **Ecology-Evolution Search Committee, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23529-0266 U.S.A.** Review of applicants will begin on April 1, 2002, and will continue until the position is filled. The position is effective August 2002. *Old Dominion University is an Affirmative Action/Equal Opportunity Employer and requires compliance with the Immigration Reform and Control Act of 1986.*

Electrophysiologist at University of California Los Angeles: **POSTDOCTORAL POSITIONS** available immediately to study the signaling pathways regulating hippocampal synaptic plasticity, desensitization of G protein-coupled receptors, and ion channels. Applicants must have a Ph.D. or M.D. Experience in patch clamping, brain slice recording, and cell culture is desirable. Send curriculum vitae to: **Dr. Cui-Wei Xie, Department of Psychiatry, University of California Los Angeles; e-mail: cxie@mednet.ucla.edu**.

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Faculty Position in Polymer Chemistry

Applicants for this open position at the Department of Materials Science of ETH Zurich should have an excellent record of internationally recognized research in the field of polymer chemistry, and should be equally qualified to teach modern polymer chemistry. The expertise of the successful candidate may be in any of the branches of polymer chemistry, but in particular, in synthetic chemistry, physical chemistry, or materials science. Collaborations with other research groups within the ETH Zurich, at other Swiss Universities, and industry are expected.

Please submit your application together with a curriculum vitae and a list of publications **to the President of ETH Zurich, Prof. Dr. O. Kübler, ETH Zentrum, CH-8092 Zurich, no later than April 30, 2002.** The ETH Zurich specifically encourages female candidates to apply with a view towards increasing the proportion of female professors.

HIV Drug Resistance Program

Postdoctoral Fellow, Research Fellow, and Senior Research Fellow Positions

Postdoctoral Fellow, Research Fellow, and Senior Research Fellow positions are available immediately in a research program focused on understanding the replication of human immunodeficiency virus and other retroviruses. Research projects encompass a broad area of retroviral replication and pathogenesis; specific ongoing projects include reverse transcriptase fidelity and recombination, development of anti-HIV integrase inhibitors, mechanisms of reverse transcription, mechanisms of viral drug resistance, and viral RNA dimerization.

Applicants must have a strong background in molecular biology, biochemistry, and/or virology. Applicants to the Research Fellow and Senior Research Fellow positions must have relevant prior postdoctoral experience. The salary ranges for the Postdoctoral Fellow, Research Fellow, and Senior Research Fellow positions are $32K-$51K, $34K-$58K, and $42K-$79K, respectively, commensurate with experience. To apply, submit a cover letter, curriculum vitae, bibliography, and names of three references to:

Dr. Vinay K. Pathak
HIV Drug Resistance Program
NCI-Frederick, P.O. Box B
Frederick, MD 21702
Fax: 301-846-6013, E-mail: vpathak@ncifcrf.gov
Website: www.retrovirus.info/Pathak.html

NATIONAL® CANCER INSTITUTE

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THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS

Faculty Position in Genetics of Addiction Rank Open

The Department of Genetics and the Center of Alcohol Studies of Rutgers University are jointly seeking an outstanding scientist to fill a new position in human genetics. Researchers investigating genetic aspects of addictions and co-morbid behaviors, who would like to be part of an interdisciplinary addiction research center, are encouraged to apply. Interests may be in any substance abuse and research with human subjects, with or without concurrent animal model systems, is encouraged.

Appointments will be made at a tenured or tenure-track level, consistent with candidates' credentials. Candidates must have either a Ph.D. an M.D. or both, a demonstrated ability to conduct and publish significant independent research, and an interest in teaching at the graduate and undergraduate levels. Senior level candidates must have a strong record of grant support.

The successful candidate will also join a newly established Human Genetics Institute, and join a growing and vibrant life sciences community on Rutgers' Busch Campus, the site of the Waksman Institute, the Center for Biotechnology and Medicine, the Center for Alcohol Studies, the Environmental and Occupational Health Sciences Institute and the Robert Wood Johnson Medical School. This campus is located in central New Jersey with easy access to New York City, beaches, and countryside.

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

Rutgers University is an Equal Opportunity/Affirmative Action Employer.

The National Institute of Dental and Craniofacial Research seeks applicants for a Health Scientist Administrator to plan and direct a full array of programs utilizing grants, cooperative agreements and contract support for clinical trials and patient-oriented research, with an emphasis on clinical trials. A candidate with appropriate scientific experience may be selected as Program Director for the Clinical Trials and Patient-Oriented Research Program. Alternatively, a candidate who also has extensive supervisory and/or managerial experience may be selected as the Branch Chief, Clinical, Epidemiology and Behavioral Research Branch. These positions will not be filled concurrently. Candidates should indicate the position for which they are applying.

All applicants should have a D.D.S., D.M.D., M.D. and/or Ph.D. in a discipline related to the position, and training and experience in the conduct and analysis of clinical trials. The Program Director's starting salary will be in the range of $66,229-101,742, commensurate with qualifications and experience. The Branch Chief's starting salary will be in the range of $92,060 - 119,682, commensurate with qualifications and experience. In either case, physicians may be eligible for a Physician's Comparability Allowance up to $20,000/year.

Copies of the full text announcements are available at: **http://WWW.NIDCR.NIH.GOV/about/joblist.asp** Interested candidates may contact **Ms. Weiss, HRMB, NIDCR at (301)496-6971 or Esther.Weiss@nih.gov** Applications will be accepted if postmarked, emailed, faxed or hand-carried by April 30, 2002.

NIH is an Equal Opportunity Employer.

POSITIONS OPEN

FACULTY APPOINTMENT
MIDLEVEL OR SENIOR TENURE-TRACK MOLECULAR NEUROBIOLOGIST
Hunter College, City University of New York

The City University of New York (CUNY) announces a new search for a full-time faculty appointment in the Department of Biological Sciences at the Hunter College campus in mid-Manhattan. The appointment would preferably be at the **ASSOCIATE** or **FULL PROFESSOR** level but an appointment at the Assistant Professor level would be considered for exceptional candidates. Outstanding candidates with a proven track record in publication and funding in molecular neurobiology are encouraged to apply. A competitive start-up package will be provided.

This recruitment is part of a growing commitment to strong neuroscience research within the Biology Department at Hunter College. The research interests of the successful candidate would be expected to complement the existing Specialized Neuroscience Research Program (SNRP) at Hunter College, funded by NCRR and NINDS with a theme of "Repairing the Damaged Nervous System" (see **website: http://biology.hunter.cuny.edu/SNRP**). Candidates with research interests in molecular biology of axonal guidance molecules, regeneration, myelination, apoptosis, and synapse formation will be considered. Applicants must provide the following: (1) current curriculum vitae and list of publications, (2) brief statement of research interests (three pages or less), and (3) names and addresses of three references to: **Professor Marie T. Filbin, Ph.D., Director, SNRP, Biology Department, Hunter College, 695 Park Avenue, New York, NY 10021**. Complete applications must be received by April 30, 2002. Appointment will commence on or after 1 September 2002. *An Equal Opportunity/Affirmative Action/Immigration Reform and Control Act/Americans With Disabilities Act Employer.*

The University of Massachusetts Medical School is seeking a dynamic leader for the position of **DIRECTOR OF THE DEPARTMENT OF ANIMAL MEDICINE**. The Animal Medicine Department includes facilities for species that range from nonhuman primates and aquatic species to extensive VAF and SPF facilities for rodents. The University of Massachusetts Medical School is a major research institution with 250 Research faculty conducting research in six buildings on the Worcester campus. The Medical School is committed to a major expansion of research in the area of genomics, neurosciences, cancer biology, chemical biology, immunology, and infectious diseases in a new state-of-the-art, 365,000-square-foot research building. The ideal candidate should have a D.V.M. or other suitable Doctoral degree and experience in managing a large and diverse animal medicine department. Applicants are invited to submit a letter of interest, current curriculum vitae, and names of three references to: **Aldo Rossini, M.D., Program in Molecular Medicine, Two Biotech, Suite 218, 373 Plantation Street, Worcester, MA 01605**. *The University of Massachusetts Medical School is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION
Louisiana State University
Health Sciences Center New Orleans

Postdoctoral position available to study mechanisms of endothelial cell differentiation with a focus on molecular interactions in the nucleus. Strong background in cellular and molecular biology required. Experience with transgenics and/or animal models of angiogenesis (especially retinal) desirable. To apply, send brief description of research background, curriculum vitae, and names of at least three references to: **Dr. Mark C. Alliegro, Department of Cell Biology and Anatomy, LSU Health Sciences Center, 1901 Perdido Street, New Orleans, LA 70112.** *Louisiana State University Health Sciences Center is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ENVIRONMENT

A leading wildlife conservation organization seeks Vice President for its species conservation program. The program focus is on developing innovative scientific and policy strategies to conserve and restore imperiled species. Qualified candidates will have an advanced degree in wildlife management or ecology, conservation biology, natural resources management, or related field; strong management, planning, and administrative skills including demonstrated scientific expertise; at least five years of relevant management experience supervising professionals and directing advocacy campaigns; and an understanding of federal agencies, laws, and policies dealing with the use and conservation of natural resources, particularly the Endangered Species Act. For full job description, refer to **website: http://www.defenders.org/about/employment.html**. Send cover letter; résumé; and writing sample by April 15, 2002, to: **Species Vice President Search, Defenders of Wildlife, 1101 14th Street, N.W., Suite 1400, Washington, DC 20005. FAX: 202-682-1331.** No calls, please. *Equal Opportunity Employer.*

PROFESSOR AND HEAD
Department of Entomology
Texas A&M University

Texas A&M University invites applications for the position of tenure-track Professor and Head. Qualifications: Ph.D. in entomology, a record of distinction in entomology in a university environment, and capability of leadership and management of multidisciplinary programs. Prior administrative experience in the Land Grant College system is desirable. The Department of Entomology has a statewide presence of approximately 86 faculty, 35 undergraduate, and 60 graduate students and offers B.S., M.S., and Ph.D. degrees in entomology and M.Agr. degree in economic entomology and in plant protection. The Department conducts statewide programs of research, extension, and public service related to entomology. Submit curriculum vitae, statement of administrative philosophy, five reprints, and five letters of reference to: **Dr. Alan R. Sams, Chair, Search Committee, Department of Poultry Science, Texas A&M University, College Station, TX 77843-2472. Telephone: 979-845-1931; e-mail: asams@poultry.tamu.edu**. Applications accepted through June 1, 2002, or until position is filled. For information, visit **website: http://www.insects.tamu.edu**. *Texas A&M University is an Equal Opportunity Employer.*

FACULTY APPOINTMENT
Memorial Sloan-Kettering Cancer Center
Department of Radiology

The Department of Radiology invites applications for a faculty position at the level of **ASSISTANT MEMBER** in the Laboratory of Molecular Imaging. Traditionally strong in the area of imaging, the Laboratory is an expanding, highly interactive, multidisciplinary group with a broad spectrum of research interests relevant to human cancer. We are seeking creative applicants with an advanced degree (Ph.D. or M.D.) and a record of scientific accomplishment in the areas of animal modeling of human cancers and/or animal imaging. We are particularly interested in the animal models for ovarian and prostate cancer; however, outstanding candidates in any area of cancer modeling will be considered. Interested candidates should send curriculum vitae, summary of research interests, and three letters of reference to: **Hedvig Hricak, M.D., Ph.D., Chairman, Department of Radiology, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021. E-mail: hricakh@mskcc.org; website: http://www.mskcc.org**. *The Memorial Sloan-Kettering Cancer Center is an Equal Opportunity Employer.*

POSITIONS OPEN

MICROSCOPIST
Search Continued

St. Lawrence University seeks a **MICROSCOPY TECHNICIAN**. This is a full-time, 12-month academic support staff position. A Bachelor's degree in science (preferably in biology) is required. A Master's degree and/or experience with confocal microscopy as well as electron microscopy (TEM and/or SEM) are preferred. The successful candidate should show evidence of mechanical and laboratory aptitude, computer experience, a desire to learn and teach new methods, and a positive work ethic. The successful candidate will help oversee a developing interdisciplinary, multiuser microscopy/imagery center; will assist faculty and student researchers in advanced microscopy techniques; help teach microscopy methods; and provide for the routine maintenance of the instrumentation infrastructure. The major instruments at the facility are on service contracts, and the candidate will be expected to develop good working relationships with the professional service personnel. The facility is housed in the Biology Department and the successful candidate will also serve other science departments.

Applicants should send a letter of application, current curriculum vitae (including references if appropriate), a statement of any relevant research and teaching interests related to microscopy, and have three letters of recommendation forwarded to: **Dr. T. Budd, Biology Department, St. Lawrence University, Romoda Drive, Canton, NY 13617**. The Search Committee will review applications until the position is filled.

St. Lawrence University, chartered in 1856, is an independent, private, nondenominational university whose mission is to provide an inspiring and demanding undergraduate education in the liberal arts to students selected for their seriousness of purpose and intellectual promise. The University's 2,100 students come from 35 U.S. states and 21 countries. Located halfway between the high peaks of the Adirondack Mountains and the national capital of Canada, Ottawa, the University provides unparalleled access to outdoor recreation and international social and cultural opportunities. For more information, please visit SLU's **website: http://www.stlawu.edu/resources/job.html**. *St. Lawrence University is an Affirmative Action/Equal Employment Opportunity Employer. Women, minorities, veterans, and persons with disabilities are encouraged to apply.*

POSTDOCTORAL POSITION
National Jewish Medical and Research Center

Positions are available in a laboratory focused on immunologic and molecular mechanisms in asthma and other inflammatory diseases. Research areas include signal transduction pathways, which antagonize steroid receptor action, transcriptional control of steroid-sensitive genes, control mechanisms, and immunologic responses. Cellular immunology, molecular biology, or protein chemistry experience is required. Methodologies employed by the laboratory include flow cytometry expression array analysis, stem cell modification and transplantation, and immunohistochemistry. *Recent graduates with U.S. citizenship are encouraged to apply.* Please send curriculum vitae to: **Dr. Donald Leung, Ph.D., M.D.; e-mail: leungd@njc.org**.

POSTDOCTORAL POSITION
University of Pittsburgh

A Postdoctoral position is available to study bFGF and FGFR 1-mediated signaling in malignant human melanoma and tumor angiogenesis. The project involves gene targeting of the growth factor/receptor in the tumors followed by noninvasive optical imaging analysis of the melanomas and their blood vessels. Interested individuals with a Ph.D. or M.D./Ph.D. degree and experience in molecular biology are invited to submit their curriculum vitae and the names and addresses of three references to: **Dorothea Becker, Ph.D., Department of Pathology, University of Pittsburgh, BST E1050, 211 Lothrop Street, Pittsburgh, PA 15213.**

IMCA-CAT at the Advanced Photon Source

The Industrial Macromolecular Crystallography Association Collaborative Access Team (IMCA-CAT) at the Advanced Photon Source, Argonne National Laboratory, seeks candidates for three positions:

* **SECTOR SCIENTIST:** responsible for the technical program of the CAT and for scientific progress derivable from maintenance and improvements in the CAT's beamlines. This researcher should have a Ph.D. in physics or chemistry and 3 years of synchrotron experience. The Sector Scientist will participate in user support and technical operations, and will co-direct the activities of the CAT staff. **(Position available immediately).**

* **STAFF CRYSTALLOGRAPHER:** responsible for maintaining and extending the crystallographic program of the CAT. This researcher should have a Ph.D. and experience in either macromolecular or small-molecule crystallography. The Crystallographer will perform user support, determine structures, and facilitate software usage. **(Position available May 2002).**

* **USER SUPPORT TECHNOLOGIST:** facilitates the technical program and contributes to the user program of the CAT. This researcher should have either a relevant Master's degree or a Bachelor's degree and 3 years of related experience. **(Position available April 2002).**

Illinois Institute of Technology (IIT), a prominent, Ph.D.-granting private university in Chicago, will employ these three people through the Center for Synchrotron Radiation and Instrumentation (CSRRI). IMCA-CAT conducts its research program at Sector 17 of the APS using state-of-the-art diffraction equipment and beamline optics. The CAT encourages employees to pursue their own research using the CAT's facilities and to participate in the CSRRI's programs. For more information, visit: **www.imca.aps.anl.gov** Candidates should submit a CV and two references to:

ILLINOIS INSTITUTE OF TECHNOLOGY

Transforming Lives. Inventing the Future. **www.iit.edu**

howard@iit.edu
fax 630-252-0521

EOE

THE CHINESE ACADEMY OF SCIENCES
with support of the
MAX-PLANCK-GESELLSCHAFT
intends to establish an
INDEPENDENT RESEARCH GROUP
at the Kunming Institute of Zoology
for a

PROMISING YOUNG CHINESE SCIENTIST

Application is invited for the position as

RESEARCH GROUP LEADER

from young scientists in China or abroad who have achieved a degree of international recognition in their field, preferably in

MOLUCULAR REPRODUCTIVE &
DEVELOPMENTAL BIOLOGY

The successful applicant will be expected to conduct fully independent, original and dynamic research programs.

The position offers full scientific and economic independence and is limited to a maximum of five years. He/she is paid according to Chinese regulations; in addition, speial sozial benefits, a supplement in foreign currency and travel grants are offered. The group will have modern laboratory facilities and funding for scientific and technical co-workers. The operating expenses include funds in foreign currency.

Applications, including a tabular curriculum vitae, a list of publications with reprints of three selected papers, a description of major scientific achievements and a summary of future research plans, should be submitted in English by April 15, 2002 to

Prof. Uli Schwarz
Direktor der Abteilung Biochemie
Max-Planck-Institut für Entwicklungsbiologie
Spemannstraße 35/11, D-72076 Tübingen/Germany
E-mail: uli.schwarz@tuebingen.mpg.de
Tel: +49 7071 601-413
Fax: +49 7071 601-447.

A group of finalists will be informed soon and invited to present their projects in Kunming at the beginning of May. Travel and accommodation expenses will be covered.

Tenure-Track Faculty Positions
In Molecular and Cellular Physiology

The Department of Biomedical Sciences in the College of Veterinary Medicine at Cornell University invites applications for tenure-track faculty positions, preferably at the level of Assistant or Associate Professor. Applicants must possess a doctoral degree in a relevant field (Ph.D., DVM, MD, or equivalent). The successful candidates will be expected to develop extramurally funded research programs and to contribute to departmental teaching. Cornell University offers research opportunities in a variety of areas, including functional genomics, cell signaling, bioengineering, nanobiotechnology, biophysics and chemical biology. For more information see: http://web.vet.cornell.edu/public/BioSci/new/vbs_facultyhire.html.

A letter of interest, curriculum vitae, and the names of three references should be sent to:

CORNELL

Dr. Robert F. Gilmour, Jr.
Department of Biomedical Sciences
Cornell University
T7-012C VRT, Box 17
Ithaca, NY 14853-6401

Women and minority candidates are especially encouraged to apply. Applications will be considered as they are received until suitable candidates are identified.

Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator

http://www.cornell.edu
http://chronicle.com/jobs/profiles/2377.htm

The University of Chicago
Gwen Knapp Center for Lupus & Immunology Research
Faculty Position

The Gwen Knapp Center for Lupus & Immunology Research at the University of Chicago is seeking to fill a tenured position in Immunology. This appointment is part of an exciting and renewed expansion of the Center and the Department of Pathology.

Successful applicants should hold an MD, PhD or MD/PhD and have an outstanding record of published research and sustained peer reviewed funding. The academic rank will be commensurate with qualifications and will be in the Department of Pathology. Excellence, rather than a specific area of research focus, will be the most important criteria for selection. A commitment to education (residency training and/or graduate or medical student training) essential. The Knapp Center offers excellent laboratory facilities and access to outstanding core facilities at the University of Chicago including flow cytometry, confocal/immunocelectron microscopy, DNA and peptide synthesis, microarray facility and immunohistochemistry. Highly competitive start-up package is available.

Interested candidates should submit their curriculum vitae, a short research summary with plans for further research, and three letters of recommendation to:

Vinay Kumar, MD, Chair, Department of Pathology
The University of Chicago, Department of Pathology
Committees on Immunology and Cancer Biology
5841 S. Maryland Avenue, MC 1083, Chicago, IL
60637-1470, E-mail: vkumar@delphi.bsd.uchicago.edu

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

UIC University of Illinois at Chicago

Faculty Positions
Department of Pharmacology
University of Illinois at Chicago

The Department of Pharmacology (http://www.uic.edu/depts/mcph) solicits applications for the rank of Assistant, Associate, or Full Professor. We are seeking individuals with NIH funding or high probability of research support in the case of junior faculty. Recruitment emphasis is on areas related to mechanisms of cell proliferation, apoptosis, and angiogenesis (for conjoint position with the Cancer Center) as well as cardiovascular biology and the biology of endothelial, alveolar epithelial and hematopoietic cells. Significant research accomplishments in other areas will also be considered. Individuals must be of outstanding caliber and are expected to develop a nationally credible research program. Exceptional start-up package and space in new research building are available. Candidate must possess a M.D. or Ph.D.

For fullest consideration please send a CV, names of three referees, and summary of research goals by May 15, 2002 to: **Faculty Search, Dept. of Pharmacology (M/C 868), University of Illinois at Chicago, College of Medicine, 835 S. Wolcott Ave., Rm. E403, Chicago, IL 60612.**

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

POSITIONS OPEN

ASSISTANT/ASSOCIATE CURATOR (Department Chair) Ornithology and Mammalogy

The Department of Ornithology and Mammalogy of the California Academy of Sciences seeks an outstanding Ornithologist or Mammalogist to fill the position of Assistant/Associate Curatorship and Department Chair. The successful candidate will pursue a research program in systematic biology that is specimen- and field-based. He or she should be a leader in scientific research and in the communication of science to the public and also have a strong desire to participate in the training of students. Teaching opportunities (including graduate student mentorships) are possible through positions at San Francisco State University and other Bay Area universities. Preference will be given to candidates who (1) utilize and integrate different types of data (e.g., morphological, molecular, paleontological, and/or behavioral) into their research using contemporary techniques; (2) examine historical trends in biogeography, behavior, or morphology from a phylogenetic perspective; and (3) can apply their research findings to the conservation of animals in their natural habitats. The Academy's Department of Ornithology and Mammalogy houses a total of over 100,000 bird specimens and over 30,000 mammal specimens.

Applicants must have a Ph.D. Additionally, preference will be given to applicants with postdoctoral or other post-Ph.D. academic experience; significant completed scientific research; field experience; demonstrated success in obtaining external funding; and demonstrated abilities in personnel supervision and administration.

This is a full-time, regular faculty position on a 10-month annual basis. Interested candidates should submit curriculum vitae and letter of interest including plans for future research to: **California Academy of Sciences, Human Resources Department Number COM102, Golden Gate Park, San Francisco, CA 94118**. Applications must be received by April 26, 2002. *The California Academy of Sciences is an Equal Opportunity Employer committed to diversity.*

Medical University of South Carolina, Institute of Pediatrics Research, invites applications for the following positions: **ASSISTANT PROFESSOR/INSTRUCTOR.** Molecular Biologist with three to five years of postdoctoral experience in transgenic/knockout technology to generate and to study the molecular basis of lipid metabolism-related disorders. **POSTDOCTORAL FELLOW**. Ph.D. in biochemistry or cell biology with experience in protein purification/enzymology to study mechanisms of intracellular protein sorting/targeting to subcellular organelles. **POSTDOCTORAL FELLOW**. Ph.D. in biochemistry or cell biology or neurobiology to study cellular signaling related to cell death during neuroinflammatory disease process. Interested candidates are invited to send their curriculum vitae with a list of references to: **Dr. Inderjit Singh, Vice Chair for Research, Medical University of South Carolina, Department of Pediatrics, P.O. Box 250160, Charleston, SC 29425. E-mail: singhi@musc.edu; Telephone: 843-792-7542; FAX: 843-792-7130.**

RESEARCH FELLOW Fox Chase Cancer Center

Candidate will conduct research on projects relating to sequence profile-profile alignment, protein structure modeling, and molecular design. Applicants should have wide experience in bioinformatics computational methods and strong background in physical chemistry. Ph.D. and at least six years of experience in using computational tools for real molecular data analysis required. Experience in using modern statistical approaches such as Bayesian methods and Dirichlet mixtures. Programming in C/C++; PERL, and UNIX shell scripting. Send cover letter and résumé to: **Ms. Holly J. Molle, FCCC, 7701 Burholme Avenue, Philadelphia, PA 19111.**

POSITIONS OPEN

American Red Cross

Together, we can save a life

INVESTIGATOR POSITIONS Hematopoiesis Research

Applications are invited for two Principal Scientist positions at the **ASSISTANT/ASSOCIATE PROFESSOR** level at the American Red Cross Holland Laboratory. Highly motivated Ph.D.s who can develop and maintain a competitive, peer-reviewed research program focused on hematopoietic regulatory mechanisms using gene knockout or genomics technologies are encouraged to apply. Excellent interpersonal/communication skills and an interest in developing collaborative/program projects with other Scientists essential. Candidates with extramurally funded programs will be considered for appointment at the Scientist II level. There is also potential for appointment to the faculty of The George Washington University Medical Center. Holland Laboratory, the research and development division of the American Red Cross, is located 10 miles north of the NIH in Rockville, Maryland (outside of Washington, D.C.), and offers an excellent start-up package including well-equipped, newly renovated laboratory space plus full salary support and benefits. Interested individuals should send their curriculum vitae, statement of accomplishments and future research plans, and three references to: **Robert G. Hawley, Ph.D., Executive Director, Cell Therapy Research and Development, Head, Hematopoiesis Department, American Red Cross Holland Laboratory, 15601 Crabbs Branch Way, Rockville, MD 20855. E-mail: diehld@usa.redcross.org.** *Equal Opportunity Employer; Minority/Female/Disabled/Veteran.*

CELLULAR IMMUNOLOGY

Advanced BioScience Laboratories, located in Kensington, Maryland, seeks a **RESEARCH SCIENTIST** for ABL's immunology program with emphasis on cellular immunology and human retrovirology. The successful candidate will conduct and manage specific research programs, train and supervise Research Assistants in the performance of immunological and virological assays, plan and coordinate experiments, and assist in the preparation of proposals for new programs either in the form of grants or contracts. Candidates must have a Ph.D. with two or more years of postdoctoral experience in cellular immunology, good written and oral communication skills, and the ability to work as a team member. ABL is a biomedical research facility with a long history of innovative research in human and animal retrovirology and supported by government and commercial contracts. Interested candidates should submit a cover letter and curriculum vitae to: **Michele M. Grace, Human Resource Department, 5510 Nicholson Lane, Kensington, MD 20895. FAX: 301-816-5254; e-mail: mgrace@ablinc.com.** *ABL is an Equal Opportunity Employer. Minorities/Females/Disabled/Veterans.*

PH.D. METABOLISM INVESTIGATOR: Gerontology, VA GRECC at University of Maryland, Baltimore, seek a Ph.D. Physiologist or Biochemist experienced in adipose tissue and lipid metabolism research and facile in basic laboratory methods to direct the laboratories of M.D. Investigators, collaborate on R01 grants, and mentor postdoctoral trainees. Rank and salary commensurate with experience. Submit curriculum vitae, references to: **Andrew P. Goldberg, M.D., c/o JoAnn Gibbs, Academic Programs Office, Department of Medicine, Room N3E10, University of Maryland, Baltimore, 22 South Greene Street, Baltimore, MD 21201**. Cite Position 03-309-301. *University of Maryland, Baltimore, encourages women and minorities to apply and is an Affirmative Action/Equal Employment Opportunity/Americans With Disabilities Act Employer.*

POSITIONS OPEN

PUBLIC HEALTH MEDICAL MICROBIOLOGIST University of Iowa Hygienic Laboratory

The University of Iowa Hygienic Laboratory (Iowa's environmental and public health laboratory) located in Iowa City, Iowa, has a challenging opportunity for a talented Public Health Medical Microbiologist. This senior-level Scientist will act as Principal Investigator for grant/contracts, perform research and development activities, initiate new programmatic areas, serve as statewide consultant, and oversee the microbiology laboratory in surveillance as well as diagnostic activities. Requires a Doctoral degree in microbiology, certification as a Diplomate of the ABMM (or eligible for certification), and at least five to 10 years of postdoctorate work experience in public health. Must be skilled in conventional microbiological and molecular methods, instruments, and interpretation of results and able to understand and interpret implications of public health tests conducted on humans, food, and water. Solid communication skills and management/supervisory experience necessary. Publications in peer-reviewed journals necessary. Experience with indoor air quality programs highly desirable. Grant writing experience is also desirable. A background investigation check will be completed on the individual selected as the final candidate. Refer résumé to:

Medical Microbiologist Search
University of Iowa, Hygienic Laboratory
102 Oakdale Campus, H–101–OH
Iowa City, IA 52242-5002
E-mail: patricia-kosier@uiowa.edu
Website: http://www.uhl.uiowa.edu

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

RESEARCH SCIENTIST POSITION (GS–13, 14, or 15); nutrition and immune function; U.S. Department of Agriculture; Agricultural Research Service; Western Human Nutrition Research Center at University of California, Davis. *U.S. citizenship is required.* An adjunct faculty appointment at UC Davis is anticipated. The incumbent will develop a strong, independent research program (using both core funding and extramural grants) to elucidate the mechanisms by which nutrients modulate the immune response at the molecular level. An excellent environment and resources are available for collaboration with WHNRC and UCD Scientists. Human studies will be emphasized but work in model systems is also appropriate. A Ph.D. or equivalent degree, postdoctoral research experience, demonstrated expertise, and research productivity in immunology is desired. Application forms and the official vacancy announcement, ARS–X2W–2141, are available at **Telephone: 301-504-1482** or **website: http://www.ars.usda.gov**. Applications must be postmarked by May 10, 2002. For more information, contact: **Charles Stephensen; website: http://www.whnrc.usda.gov**. *The USDA is an Equal Opportunity Provider and Employer.*

RESEARCH FISHERY BIOLOGIST

The National Marine Fisheries Service is seeking applicants for a permanent position at our Santa Cruz Laboratory, Santa Cruz, California, studying estuarine and ocean ecology of Pacific salmon. The incumbent serves as a **PRINCIPAL INVESTIGATOR** conducting research on the influences of environmental variables on salmon physiology and ecology to address endangered species and fishery management issues. *Applicants must be U.S. citizens*, have a Ph.D. or equivalent education and experience, and have a strong record of research and publication. Salary range: $59,471 to $77,309. To apply, see **website: http://www.jobs.doc.gov (Announcement W/NMF/SWC/020231.JC)**; **Telephone: 206-526-6420** for more information. Closes March 22, 2002. *Equal Opportunity Employer.*

ANNOUNCEMENTS

MRS FALL MEETING 2002

DECEMBER 2–6
BOSTON, MA

Exhibit and research tools seminars

For additional meeting information, visit the MRS Web site at
www.mrs.org/meetings/
or contact:

MRS
Member Services
Materials Research Society
506 Keystone Drive
Warrendale, PA 15086-7573
Tel 724-779-3003
Fax 724-779-8313
E-mail: info@mrs.org

Abstract Deadlines — In fairness to all potential authors, late abstracts will not be accepted.
June 5, 2002: for abstracts sent via fax or mail ◆ June 19, 2002: for abstracts sent via the MRS Web site

2002 MRS FALL MEETING

www.mrs.org/meetings/fall2002/

New Materials Development
Characterization Methods
Process Technology

SYMPOSIA

Polymers and Biomaterials

A: Defect-Mediated Phenomena in Ordered Polymers
B: Polymer/Metal Interfaces—Fundamentals, Properties, and Applications
C: Bio-Inspired Nanoscale Hybrid Systems
D: Electronics on Unconventional Substrates—Electrotextiles and Giant-Area Flexible Circuits

Nanomaterials and Technology

E: Physics and Technology of Semiconductor Quantum Dots
F: Nanocrystalline Semiconductor Materials and Devices
G: Spatially Resolved Characterization of Local Phenomena in Materials and Nanostructures
H: Three-Dimensional Nanoengineered Assemblies
I: Nanomaterials for Structural Applications
J: Nano- and Microelectromechanical Systems (NEMS and MEMS) and Molecular Machines

Electronic and Photonic Materials

K: Silicon Carbide—Materials, Processing, and Devices
L: GaN and Related Alloys
M: Progress in Semiconductor Materials II—Electronic and Optoelectronic Applications
N: Novel Materials and Processes for Advanced CMOS
O: Microphotonics III—Materials and Applications

Spin, Superconductivity, and Ferroelectricity

P: Novel Aspects of Spintronic Materials and Devices
Q: Magnetoelectronics—Novel Magnetic Phenomena in Nanostructures
R: Advanced Characterization of Artificially Structured Magnetic Materials
S: Advances in Superconductivity—Electronics and Electric Power Applications from Atomically Engineered Microstructures
T: Crystalline Oxides on Semiconductors
U: Ferroelectric Thin Films XI

Surfaces, Interfaces, and Membranes

V: Interfacial Issues for Oxide-Based Electronics
W: Morphological and Compositional Evolution of Thin Films
Y: Surface Engineering 2002—Synthesis, Characterization, and Applications
Z: Structure-Property Relationships of Oxide Surfaces and Interfaces
AA: Membranes—Preparation, Properties, and Applications

Metals, Alloys, and Inorganics

BB: Defect Properties and Related Phenomena in Intermetallic Alloys
CC: Supercooled Liquids, Glass Transition, and Bulk Metallic Glasses
DD: Solid-State Chemistry of Inorganic Materials IV
EE: Solid-State Ionics
FF: Materials for Fuel Cells and Fuel Processors
GG: Fiber-Reinforced Cementitious Composites
HH: High-Temperature Thermal Spray Coatings—Thermal Barrier Coatings
II: Scientific Basis for Nuclear Waste Management XXVI

Materials Science and Society

JJ: The Undergraduate Curriculum in Materials Science Education (MSE)
KK: Femto and Attosecond Phenomena in Materials
LL: Rapid Prototyping Technologies III
MM: Granular Material-Based Technologies
NN: Virtual Symposium—Molecular Electronics
X: Frontiers of Materials Research

MEETING ACTIVITIES

Symposium Tutorial Program

Available only to meeting registrants, the symposium tutorials will concentrate on new, rapidly breaking areas of research.

Exhibit and Research Tools Seminars

A major exhibit encompassing the full spectrum of equipment, instrumentation, products, software, publications, and services is scheduled for December 3–5 in the Hynes Convention Center, convenient to the technical session rooms. Research Tools Seminars, an educational seminar series that focuses on the scientific basis and practical application of commercially available, state-of-the-art tools, will be held again this fall.

Publications Desk

A full display of over 730 books, plus videotapes and electronic databases, will be available at the MRS Publications Desk.

Symposium Assistant Opportunities

Graduate students planning to attend the 2002 MRS Fall Meeting are encouraged to apply for a Symposium Assistant (audio-visual assistant) position.

Employment Center

An Employment Center for MRS meeting attendees will be open Tuesday through Thursday.

The 2002 MRS Fall Meeting will serve as a key forum for discussion of interdisciplinary leading-edge materials research from around the world. Various meeting formats—oral, poster, round-table, forum and workshop sessions—are offered to maximize participation.

02-0019

Agricultural Research Service

RESEARCH AGRONOMIST

The position is located in the Animal Manure and By-products Lab, ANRI, ARS, in Beltsville, MD. The incumbent will be responsible for conceiving, planning, and carrying out integrated research with soils, plants, and animals with the goal of limiting phytoavailability and bioavailability of forms or amounts of heavy metals in manure, by-products amended soils, and existing orchard soils that are contaminated with heavy metals. Applicants must have a degree in agronomy or related discipline that includes at least 30 semester hours of basic plant sciences, including at least 15 hours in agronomic subjects. In addition, applicants must have one year of specialized experience as indicated in the vacancy announcement or applicants at the GS-12 level can also qualify with either a Ph.D. or equivalent Doctoral degree. Must be US citizen.

Closing date of this announcement is March 25, 2002. **Telephone: 301-504-1482** to request a copy of ARS-X2E-2147 or access website: **http://www.ars.usda.gov/afm/hrd/resjobs**.

USDA/ARS is an Equal Opportunity Provider and Employer.

Chief Laboratory Branch, Division of Viral Hepatitis, Centers for Disease Control and Prevention

The Centers for Disease Control and Prevention, Division of Viral Hepatitis is seeking applications for the position, Chief Laboratory Branch. The DVH is a WHO Collaborating Center. The position is located in Atlanta, Georgia. The Branch Chief provides leadership, direction and oversight to approximately 22 full time equivalent positions, and 40 additional visiting scientists, guest researchers, and laboratory staff. The Branch Chief directly supervises five laboratory team leaders (virology, pathology, molecular epidemiology, developmental diagnostics and reference diagnostics). The Branch Chief must possess a broad range of scientific knowledge with particular emphasis on viral hepatitis molecular biology, pathogenesis, virology, diagnostics, and immunology and a comprehensive knowledge of extant literature as well as scientific approaches taken by professional peers in government, industry and academia. Suitable candidates include those with a doctorate degree in medicine, microbiology, biology, or other appropriate field. Salary is commensurate with training and experience. A recruitment or relocation bonus of up to 25% of base salary may be available.

Applicants may send a curriculum vitae to : **Benita Minor, CDC, HRMO, 1600 Clifton Rd. N.E., Mailstop C-19, Atlanta, Ga. 30333** or **BKM7@CDC.GOV**. All applications/CVs must be postmarked no later than April 21, 2002.

CDC is an Equal Opportunity Employer and has a smoke-free environment.

Postdoctoral position available immediately, to study the regulatory mechanisms of DNA repair and transcription by chromatin structure (see: **Cell, 106, 309-318**). These projects address the basic mechanisms of cancer inhibition by chromatin modifying enzymes. Strong background in biochemistry or molecular and cell biology is required. Send curriculum vitae and names of three references to: **Dr. Keji Zhao, Laboratory of Molecular Immunology, National Heart, Lung, and Blood Institute, NIH, Bldg. 10, Rm. 7N311, 9000 Rockville Pike, Bethesda, MD 20892-1674. E-mail: zhaok@nhlbi.nih.gov Fax: 301-402-0971.**

NIH is an Equal Opportunity Employer

POSITIONS OPEN

SENIOR STAFF FELLOWS

FDA, Center for Biologics Evaluation and Research, Office of Vaccines Research and Review, Division of Bacterial Products, has immediate openings for three Senior Staff Fellows who would be expected to develop independent research programs concerning the pathogenesis, genetics, and/or immunology of *Bacillus anthracis, Yersinia pestis,Francisella tularensis*, or *Shigella dysenteriae*. A fourth position is sought to initiate an independent program to develop methods to assess the quality and clinical performance of current and new-generation vaccines against potential agents of bioterrorism. The selected candidates would also be expected to participate in the regulation of bacterial vaccines. Laboratories are located on the NIH campus in Bethesda, Maryland. Appointment is for an initial two-year period and may be extended up to seven years by mutual agreement. This appointment is equivalent to a tenure-track appointment, i.e., the candidate would be eligible for conversion to a permanent position if successful. Candidates must have an advanced degree, e.g., Ph.D. or M.D., and at least two years of postdoctoral experience and *must be either U.S. citizens or resident aliens eligible for citizenship within four years*. Salary depending on training and experience. Candidates should note **Walker-SSF** on all correspondence and send curriculum vitae, bibliography, statement of research interests, and names/contact information for three references to **e-mail: recruitment@cber.fda.gov** or mail to: **CBER Recruitment Staff, 1401 Rockville Pike, HFM–123, Rockville, MD 20852-1448**. *This agency provides reasonable accommodations to applicants with disabilities. FDA is an Equal Opportunity Employer.*

MOLECULAR BIOLOGIST

Advanced BioScience Laboratories, located in Kensington, Maryland, seeks a **RESEARCH SCIENTIST** to join a team of Investigators working on the development of HIV vaccines and other retroviral applications. The successful candidate will conduct cloning of viral and cellular genes, study expression of proteins in recombinant expression systems, and develop molecular-based technologies for therapeutic or diagnostic applications. Candidates must have a Ph.D. with two or more years of postdoctoral experience in gene cloning and protein expression, good molecular biology skills, and the ability to work as a team member. ABL is a biomedical research facility with a long history of innovative research in human and animal retrovirology and supported by government and commercial contracts. Interested candidates should submit a cover letter and curriculum vitae to: **Michele M. Grace, Human Resource Department, 5510 Nicholson Lane, Kensington, MD 20895. FAX: 301-816-5254; e-mail: mgrace@ablinc.com**. *ABL is an Equal Opportunity Employer. Minorities/Females/Disabled/Veterans.*

INSTITUTE FOR GENETIC MEDICINE UNIVERSITY OF SOUTHERN CALIFORNIA

POSTDOCTORAL POSITIONS are available immediately to study (1) the mechanism of CTG tract fragility and expansion in prokaryotic and eukaryotic model systems (**Sarkar et al.**, *Cell* **95**:531–540, 1998); (2) the molecular basis of myotonic dystrophy using mouse models. (**Sarkar et al.**, *Nature Genetics*, **13**:325–335, 2000). Recent areas of interest include development and analysis of mice encoding CTG repeats and biochemical studies aimed at unraveling the mechanistic basis of disease development. Candidates should have a Ph.D. degree with a background in molecular biology or biochemistry. Applicants should send curriculum vitae, brief description of research interests, and names of three references to: **S. Reddy, University of Southern California, IGM, Room 240, 2250 Alcazar Street, Los Angeles, CA 90033. E-mail: sitaredd@hsc.usc.edu; FAX: 323-442-2764.** *Equal Opportunity Employer.*

POSITIONS OPEN

ASSOCIATE LABORATORY DIRECTOR

The Emory University School of Medicine, Department of Surgery (Cardiothoracic), and the Carlyle Fraser Heart Center are looking for a qualified Cardiothoracic Research Investigator to join our faculty as an Associate Laboratory Director. Qualified applicants should have a Ph.D./M.D. or equivalent with experience in cardiovascular physiology, pharmacology, vascular biology, or immunology-molecular biology. The candidate should be an established Investigator in the areas of pathophysiology of surgical or nonsurgical myocardial ischemia-reperfusion, cardioprotection, and cardiopulmonary bypass as confirmed by publication record. A track record in grant support is necessary; currently active grant/contract support is highly desirable. The candidate will work closely with cardiothoracic surgery program and may have appropriate cross-appointment with physiology. Please send curriculum vitae, selected reprints, and a letter describing future research interests to: **J. Vinten-Johansen, Ph.D., Director, Cardiothoracic Research Laboratory, Emory/Crawford Long Hospital, Carlyle Fraser Heart Center, 550 Peachtree Street, N.E., Atlanta, GA 30308-2225. E-mail: jvinten@emory.edu**. *Emory University is an Affirmative Action/Equal Opportunity Employer.*

RESEARCH CHEMIST position at the U.S. Department of Agriculture, Agricultural Research Service, Food Composition Laboratory, Beltsville, Maryland. Research involves development of analytical methods to extract, separate, and quantify phytonutrients in foods. Applicant must have knowledge in analytical chemistry and biochemistry or food sciences or natural product chemistry with skill in extraction and separation of complex organic components in biological matrices. Salary commensurate with research experience; GS–12/13/14 ($55,694 to $101,742). *U.S. citizenship is required.* For application procedures and a copy of the Vacancy Announcement ARS–X2E–2130, **Telephone: 301-504-1482** or consult the **website: http://www.ars.usda.gov**. For specific questions, call **Beverley Jacobs; Telephone: 301-504-1350; e-mail: bjacobs@ars.usda.gov**. *USDA is an Equal Opportunity Provider and Employer.*

Two **POSTDOCTORAL POSITIONS** funded by NIH are immediately available to study both the mechanisms of regulation and the role of AP-1 and Nrf-2 transcription factors in toxicant-induced respiratory pathogenesis. Experience in cell culture; protein expression; and purification, protein-protein interactions, kinase assays, and/or molecular biology is preferred. Salary: $26,000 to $30,000. Send curriculum vitae and three references to: **Sekhar Reddy, Ph.D., Department of Environmental Health Sciences, Room W7006, Johns Hopkins University, 615 North Wolfe Street, Baltimore, MD 21205. FAX: 410-955-0299; e-mail: sreddy@jhsph.edu**.

POSTDOCTORAL ASSOCIATE

Immediate opening for a Synthetic Organic Chemist (Ph.D.) with experience in modern methodologies, purification techniques, and instrumental analysis. Synthetic targets include polyamine analogues as well as natural product iron chelators, siderophores. The program is focused on the development of new therapeutics predicated on these systems. FAX résumé and three references to: **Dr. R. J. Bergeron, University of Florida; FAX: 352-392-8406; e-mail: bergeron@mc.cop.ufl.edu**.

POSTDOCTORAL POSITION
Research in Integrin-Mediated Signal Transduction

A Ph.D. with strengths in protein chemistry and/or molecular biology is required. See our **website: http://www.med.unc.edu/wrkunits/2depts/pharm/**. Please send curriculum vitae and names of three references to: **Dr. R.L. Juliano, Department of Pharmacology, CB7365, University of North Carolina, Chapel Hill, NC 27599**. *The University of North Carolina at Chapel Hill is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

NIH POSTDOCTORAL FELLOWSHIPS
Children's Hospital of Philadelphia
University of Pennsylvania

NIH training grant supporting studies of cardiovascular disease mechanisms and molecular therapies. Project fields include heart valve disease, biomaterials, gene therapy, cardiac and pulmonary development, vascular injury, drug delivery systems, tissue engineering, stem cell biology, and pharmacology. Competitive salary and full benefits. Applicants with Ph.D. and/or M.D. and *resident alien of U.S. citizen status* should send their curriculum vitae and the names of three references to:

Robert J. Levy, M.D.
William J. Rashkind Endowed Chair
University of Pennsylvania School of Medicine
Training Program Director
The Children's Hospital of Philadelphia, 7N ARC
3516 Civic Center Boulevard
Philadelphia, PA 19104
FAX: 215-590-5454
E-mail levyr@email.chop.edu.

Equal Opportunity Employer; Minorities/Females/Disabled/Veterans.

COMPUTATIONAL GENOMICS AT BERKELEY
University of California and Lawrence Berkeley National Laboratory

POSTDOCTORAL POSITIONS available immediately in computational structural and functional genomics. Research areas include prediction of gene function using genomics and phylogeny, structural genomics and structure analysis, remote homology detection, or any related area of computational molecular biology. Applicants should have a Ph.D. and programming experience. For more information, see our **websites: http://www.strgen.org/jobs/** and **http://compbio.berkeley.edu/jobs/**. Applicants should send summary of scientific interests, curriculum vitae, reprints, and reference letters to: **Dr. Steven E. Brenner, University of California, 111P Koshland Hall, Number 3102, Berkeley, CA 94720-3120. E-mail: jobs@compbio.berkeley.edu**. *The University of California and Berkeley Laboratory are Equal Opportunity/Affirmative Action Employers.*

POSTDOCTORAL POSITION in seabird conservation. Three-year field study on the foraging interactions of breeding and migratory seabirds on threatened and endangered salmonids in the mid-Columbia River. Project goals include quantifying the effect of seabirds on salmon mortality through behavioral ecology, bioenergetics, and population dynamics approaches and the discovery, design, and testing of nonlethal techniques to minimize salmon mortality. We seek a dynamic, enthusiastic, and innovative individual ready to find solutions. Interested applicants should send a cover letter, curriculum vitae, and names and contact information of three references to: **Julia K. Parrish, School of Aquatic and Fishery Sciences, University of Washington, Box 355020, Seattle, WA 98195. E-mail: kalitle@u.washington.edu**. Application review starts 1 April 2002. *The University of Washington is building a culturally diverse faculty and strongly encourages applications from female and minority candidates. The University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION (NIH funded) available to study the regulation of the growth and differentiated function of cultured kidney epithelial cells. Signaling pathways involved in transcriptional control of the Na, K-ATPase are being examined. Research approaches encompass the areas of cell biology as well as molecular biology and genetics. Salary is competitive and dependent upon experience. Send curriculum vitae as well as names and telephone numbers/e-mail addresses of three references to: **Dr. Mary L. Taub, Ph.D., Biochemistry Department, 140 Farber Hall, State University of New York at Buffalo, 3435 Main Street, Buffalo, NY 14214. E-mail: biochtau@buffalo.edu**.

Research Tools Development Grants Program

Creating the future of biotech–together

Invitrogen announces the Research Tools Development Grants Program for the discovery, development, and commercialization of innovative tools in life science research. New and established investigators working in academics, not-for-profit institutions, and for-profit companies such as start-up biotechs are encouraged to apply. Funded at $5 million per year, annual awards can be up to $100,000. Grants are provided on a quarterly basis, with each quarter focusing on a specific field of interest.

For the second quarter of 2002 we're funding research in **Functional Analysis**, understanding how genes and their corresponding proteins function and interact *in vitro* and *in vivo*. This includes expression, identification, interactions, localization, modifications, and activities, as well as bioinformatics and microarray projects. Deadline for full Grant Proposals is June 1. Future topics for 2002 are separations and purification (deadline September 1) and amplification, labeling, and quantitation (deadline December 1). Please submit a preproposal prior to a full Grant Proposal. Visit www.invitrogen.com for more information, or contact us at grants@invitrogen.com or at 800 955 6288, ext. 66140 (760 476 6140).

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INSTITUTE FOR THE STUDY OF AGING

$1 Million in Funding Available

Request for Proposals to the Biotechnology Industry for Drug Discovery and Drug Development for Alzheimer's Disease and Related Dementias

The Institute for the Study of Aging (ISOA) announces $1 million in funding through a request for proposals ("RFP") program to the biotechnology industry for drug discovery and drug development for Alzheimer's disease and related dementias. ISOA is one of the largest sources of private philanthropic funding for drug discovery and drug development for these disorders worldwide.

The objective of the program is to catalyze and accelerate the development of innovative and effective treatments by funding:

- Discovery of new compounds through rational or combinatorial drug discovery;
- Development of lead compounds through pre-clinical in vitro and in vivo evaluation including pharmacology, toxicology, pharmacokinetics and formulation chemistry; and
- Conduct of "proof of concept" clinical trials including phase Ia, Ib and phase IIa and off-label.

Two awards of $250,000 per year for two years will be awarded. The program is targeted primarily to early-stage private or public biotechnology companies worldwide, but larger companies with a documentable need for external funding to support an Alzheimer's disease program will also be considered. Deadline for receipt of applications and all supporting materials is April 15, 2002. Applications will be reviewed by a scientific panel and a final decision will be made by July 15, 2002.

Please visit our website at **www.aging.institute.org** for additional information and application materials. Contact **Sue Reynolds Foley, Chief Operating Officer** at **sreynolds@rslmgmt.com** or **212-572-4676** if you have any questions.

SACHS ASSOCIATES

Bloomberg

GLOBAL BIOTECH FOR EUROPEAN INVESTORS

The Investment Forum for Start-Up, Venture-Funded & Small-Cap Biotech Companies

16 April 2002 • The New Connaught Rooms, London

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FOR PROGRAMME AND REGISTRATION DETAILS TYPE SACHS <GO>
OR VISIT US AT: www.sachsforum.com

POSITIONS OPEN

Applications are invited for a **POSTDOCTORAL POSITION** in the Molecular Imaging Laboratory, Department of Radiology, The Univiersity of Texas M.D. Anderson Cancer Center, for imaging gene expression to monitor gene therapy led by **Vikas Kundra, M.D., Ph.D.** Candidates should have experience in molecular biology and viral delivery systems or signal transduction. Send your curriculum vitae to: **Vikas Kundra, M.D., Ph.D., Department of Diagnostic Radiology, Box 57, The 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.*

POSTDOCTORAL FELLOW
National Cancer Institute

A Postdoctoral position is available to study the function of ASAP family Arf GTPase-activating proteins (GAPs) in membrane traffic and actin remodeling. In addition to downregulating Arf, these multidomain proteins interface with a number of other signaling proteins including nonreceptor kinases and Rho-family GTP-binding proteins. Our laboratory uses a number of approaches including enzymology, cell biology, and gene knockouts in mice. *PNAS* **97:** 4011, 2000; *J. Cell Biol.* **151:**627, 2000; *Mol. Cell* **9:** 109, 2002. Applicants must have an M.D. and/or Ph.D. and less than five years of postdoctoral experience. If interested, please send curriculum vitae with cover letter and three letters of reference to: **Paul A. Randazzo, Laboratory of Cellular Oncology, Center for Cancer Research, National Cancer Institute, Building 37, Room 6040, Bethesda, MD 20892. E-mail: randazzo@helix.nih.gov; Telephone: 301-496-3788; FAX: 301-480-1260.**

POSTDOCTORAL FELLOW or **RESEARCH INVESTIGATOR** with experience in reproductive biology to develop a contraceptive microbicide. Microbicides are vaginal formulations that are designed to protect women from infection by HIV and other STIs. FDA-approved expanded safety trial for the Council's lead microbicide, Carraguard,™ has been completed and a Phase III trial to evaluate effectiveness is being planned. Carraguard™ is designed to be a noncontraceptive microbicide. We are seeking a qualified Scientist to develop a contraceptive microbicide based on our previous research. Our goal is to develop a safe, stable, and efficacious product that will simultaneously protect women from conception and infection by HIV and other sexually transmitted pathogens. Send curriculum vitae or inquiries to: **Dr. David M Phillips, The Population Council, 1230 Your Avenue, New York, NY 10021. Telephone: 212-327-8744; e-mail: dphillips@popcouncil.org; FAX: 212-327-7678.** *Affirmative Action/Equal Opportunity Employer; Minority/Woman.*

POSTDOCTORAL POSITIONS are available immediately to study molecular neurobiology of neurological diseases and substances of abuse in rodents. Applicants must have basic knowledge of molecular biology, neuroanatomy of basal ganglia, and neuropharmacology. Recent M.D. or Ph.D. is preferred. Strong writing and oral communication skills and experiences in immunoblots, cell culture, and other basic molecular technologies are also beneficial. Send curriculum vitae and names/addresses of three references to: **Dr. John Q. Wang, Division of Pharmacology, School of Pharmacy, University of Missouri–Kansas City, 2411 Holmes Street, Kansas City, MO 64108. E-mail: wangjq@umkc.edu.** *Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITIONS

Two Postdoctoral positions are available immediately. First position will study the molecular mechanisms of the *in vivo* role of quinone oxidoreductases (NQ01 and NQ02) in myeloid cell hyperplasia of bone marrow, myeloid leukemia, and increased sensitivity to chemical carcinogenesis. The NQO1 and NQO2-null mice that were generated in our laboratory demonstrated myeloid hyperplasia and increased sensitivity to chemical carcinogenesis. Approaches include cell sorting, apoptosis, cellular proliferation and differentiation, microarray, and hematological analyses. The second position will study the molecular mechanisms of signal transduction in antioxidant/oxidant induction of drug-metabolizing enzyme genes expression. Approaches include gene manipulation, transfection, nuclear translocation, immunoprecipitation, and protein-protein interactions. Salary is competitive and negotiable. Applicants should submit curriculum vitae and names, addresses, telephone numbers, and e-mail addresses of three references to: **Dr. Anil K. Jaiswal, Ph.D., Associate Professor, Department of Pharmacology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030 U.S.A. E-mail: ajaiswal@bcm.tmc.edu.**
Baylor College of Medicine is an Equal Opportunity/Affirmative Action/Equal Access Employer.

POSTDOCTORAL POSITION

A Postdoctoral position is available immediately to investigate the effects of ionizing radiation on angiogenesis and tumor growth and metastasis. Specific emphasis will be directed toward the effects of radiation on the structure and function of proteins regulating angiogenesis and tumor cell invasion. Applicants must have a Ph.D. and/or M.D. with one to two years of relevant research experience. Send curriculum vitae to: **Dr. Peter C. Brooks, New York University School of Medicine, Departments of Radiation Oncology and Cell Biology, 400 East 34th Street, New York, NY 10016. E-mail: peter.brooks@med.nyu.edu.**

A **POSTDOCTORAL POSITION** is available to study the mechanism by which p53 functions as a tumor suppressor. He/She will characterize some of the newly identified cellular genes regulated by the p53 family proteins. Experience in molecular biology and biochemistry is required. More information is available at **website: http://www.cmb.uab.edu/faculty/chen/index.html.** Please send your curriculum vitae to: **Dr. Xinbin Chen, Department of Cell Biology, MCLM 660, The University of Alabama at Birmingham, 1530 Third Avenue South, Birmingham, AL 35294-0005. E-mail: xchen@uab.edu; FAX: 205-934-0950.**

POSTDOCTORAL POSITION available immediately to study the mechanisms of apoptosis, growth arrest, and differentiation by Bin1 tumor suppressor. Highly motivated candidates with solid research experience in cancer biology, molecular genetics, and/or protein biochemistry are encouraged to apply. Please send curriculum vitae, a statement of research goals, and contact information for three references to: **Dr. Dai Sakamuro, Purdue University Cancer Center, RHPH 506B, West Lafayette, IN 47907-1333 U.S.A. E-mail: sakamuro@purdue.edu.** *Purdue University is an Affirmative Action/Equal Opportunity Employer.*

Three **POSTDOCTORAL/RESEARCH ASSOCIATE POSITIONS** available to investigate (1) the genetics of cancer susceptibility, (2) the human papillomavirus genome project, and (3) function of the von Hippel-Lindau tumor suppressor gene. Send curriculum vitae, two references, and cover letter to: **Dr. Robert D. Burk, Professor, Cancer Research Center, Albert Einstein College of Medicine, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY 10461. E-mail: burk@aecom.yu.edu.** *Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIP
Department of Physiology
University of Pennsylvania School of Medicine

Immediate opening for Ph.D. position in neurobiology. Fellow will be responsible for maintaining cell lines, molecular biological procedures, animal surgeries, and general laboratory maintenance. Must be reliable and willing to work nonstandard hours. Good oral and written communication and organizational skills required. Send curriculum vitae, brief statement of research interests, and names of three references to: **Dr. Toshi Hoshi, University of Pennsylvania, Department of Physiology, D100 Richards, 3700 Hamilton Walk, Philadelphia, PA 19104-6085. FAX: 215-573-5851.** *Penn is an Equal Opportunity/Affirmative Action Employer. Qualified women and minority applicants are encouraged strongly to apply.*

POSTDOCTORAL FELLOW OPPORTUNITIES

Marshfield Medical Research and Education Foundation, the research arm of Marshfield Clinic, has the following Postdoctoral Fellow opportunities available:

Reproductive toxicology: This Postdoctoral position, in the laboratory of **Anne R. Greenlee, Ph.D.**, is focused on understanding the effects of occupational and residential exposures (especially agricultural) on reproductive health (fertility, pregnancy outcomes, and prostate cancer). Postdoctoral work may include studies to determine host susceptibility factors increasing an individual's risk of disease and/or developing assays to rapidly assess environmental exposures on early development. A background in molecular toxicology, genetic epidemiology, and cell biology is preferred.

Infectious disease: This Postdoctoral Fellow will collaborate with **Mark Borchardt, Ph.D.**, National Farm Medicine Center. The work will involve developing and using a novel animal model for investigating the selection pressures that determine the virulence level of the agricultural zoonosis, *Salmonella typhimurium*. Molecular-based approaches will be used to document changes in host susceptibility, quantify competitive ability of different pathogen strains, determine relatedness of competing pathogen strains, and track the evolution of pathogen virulence traits. A background in microbial ecology/evolution is preferred.

These positions require a graduate degree in medical or biological science (Ph.D. M.D., D.V.M., Pharm. D., or equivalent). Marshfield Clinic is a leading health care facility with an active research and education foundation offering a unique opportunity for collaborative clinical and basic research efforts and offers a competitive salary and benefit package. Find out more at **websites: http://www.marshfieldclinic.org** or **http://www.research.marshfieldclinic.org**. Submit curriculum vitae, cover letter indicating specific interest, and three references to:

Marshfield Clinic
Human Resources Representative
1000 North Oak Avenue
Marshfield, WI 54449
E-mail: kupferj@mfldclin.edu
FAX: 715-387-5400

Equal Opportunity Employer/Affirmative Action/Minorities/Females/Handicapped/Veterans.

POSTDOCTORAL POSITIONS in gene expression profiling in the olfactory system and in circadian rhythm biology available immediately. Training includes multiple profiling techniques and bioinformatics. Expertise in basic recombinant DNA techniques required. Apply to: **Tim McClintock, Ph.D., Department of Physiology, University of Kentucky, 800 Rose Street, Lexington, KY 40536-0298. FAX: 859-323-1070; e-mail: mcclint@pop.uky.edu.** *An Equal Opportunity Employer.*

Tenure Track position in the Department of Biology Massachusetts Institute of Technology and the Whitehead Institute for Biomedical Research

The Massachusetts Institute of Technology Department of Biology and the Whitehead Institute are seeking an outstanding scientist for a tenure track position as an **Assistant Professor**. We are particularly interested in candidates for an Assistant Professor level who are pursuing research in the area of cell biology and cell physiology. A successful applicant will be expected to develop a significant and independent research program and have a commitment to excellence in undergraduate and graduate education.

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

Chair, Whitehead Institute/MIT Search Committee
Whitehead Institute for Biomedical Research
Nine Cambridge Center
Cambridge, MA 02142-1479

Consideration of completed applications will begin on April 1, 2002.

MIT/ Whitehead Institute is an Affirmative Action/Equal Opportunity Employer.

COURSES

AGOURON INSTITUTE

The Agouron Institute announces

The International Geobiology Summer Course
July 6 - August 16, 2002, Catalina Island, California

Geobiology is an emerging, interdisciplinary field at the boundary between the life and earth sciences. It builds on the interfaces between biogeochemistry, minerology, microbiology, molecular biology, evolution, paleontology and more. Internationally recognized scientists will teach an intensive laboratory, lecture and field course on this topic to selected graduate students, postdoctoral scholars and interested scientists. Participants will be exposed to an in-depth treatment of how biology interacts with the environment and how these interactions have shaped the evolution of the earth. Themes will include:

- Early Biomolecular Chemistry: S. Benner, U. Florida; A. Ellington, U. Texas
- Earth History: J. Grotzinger, MIT; A. Knoll, Harvard
- Earth Systems: B. Bebout and D. Des Marais, Ames Research Center; J.Kastings, Penn State Univ; W. Berelson, USC
- Physiological Diversity of Microbes: K. Hanselmann, U. Zurich, and D. Newmann, Caltech; K. Nealson, USC
- Microbial Evolutionary Ecology: G. Olsen, U. Illinois; T. Schmidt, Michigan State Univ.

Additional scientists will be invited to participate in three weekend symposia. The course, co-directed by **Dr. Kurt Hanselmann** and **Dr. Will Berelson**, is limited to 20 participants. Substantial financial aid is available from the Agouron Institute to help cover participant's costs for the course, including instruction, transportation, housing and food. The course will be held at the University of Southern California's Wrigley Marine Science Center on beautiful Catalina Island, just offshore of Los Angeles. Applications must be submitted by March 31, 2002 for full consideration for financial aid. After this date, students will be accepted on a space available basis. For online applications and more information, please see **http://wrigley.usc.edu/geobiology** or contact:

Geobiology Course Committee, c/o Ann Close
Wrigley Institute for Environmental Studies
University of Southern California
3616 Trousdale Parkway
Los Angeles, California, USA, 90089-0371
Phone: 213-740-6780, fax: 213-740-6720

PRIZES

BODOSSAKI FOUNDATION

SCIENTIFIC PRIZES ANNOUNCEMENT 2003

For the year 2003, the Bodossaki Foundation has decided to award four (4) prizes, of **20.500 Euros** each, to scientists of up to 40 years old, of Greek nationality, parentage or descent, in the following fields:

(1) Chemistry
(2) Research & Applications of Informatics in Medicine
(3) Economic Science
(4) Molecular Biomedicine

For further information, please contact : The Bodossaki Foundation, 20 Amalias Ave., 10557 Athens, Greece, tel. +30 10/322-2042, fax +30 10/323-7971, e-mail: **katerina@bodossaki-foundation.gr.**

www.bodossaki-foundation.gr

POSITIONS OPEN

U.S. FOOD AND DRUG ADMINISTRATION (FDA)
National Center for Toxicology Research (NCTR)
Division of Molecular Epidemiology

The National Center for Toxicological Research (visit **website: http://www.fda.gov/nctr** for information about the NCTR) has a **POSTDOCTORAL FELLOWSHIP** available immediately in the Molecular Epidemiology Division. The position is for interdisciplinary research in molecular and cell biology using state-of-the-art technologies. More specifically, the Fellow will research the mechanisms of action of dietary supplements on normal and cancer cells. Applicants should have an educational background and experience in cell culture, molecular biology, methylation (MSP), DNA sequencing, and DNA-protein interactions. The Fellowship appointment will be for up to three years, the stipend will be approximately $44,000 annually, and limited inbound and outbound moving expenses may be reimbursed. If interested, please mail your curriculum vitae, names of three references, and a cover letter to: **Dr. Beverly D. Lyn-Cook, Molecular Epidemiology, HFT–100, National Center for Toxicological Research, 3900 NCTR Road, Jefferson, AR 72079. E-mail: bcook@nctr.fda.gov.** *This is an Equal Opportunity program open to all qualified persons without regard to race, color, age, religion, sex, national origin, handicap, status as a Vietnam-era veteran, or disability. Administered by the Oak Ridge Institute for Science and Education.*

POSTDOCTORAL FELLOWSHIP
Molecular Imaging
The Van Andel Institute

A Postdoctoral position is open to study the role of tyrosine kinase during development and carcinogenesis using and developing molecular imaging techniques. Molecular imaging is a new, emerging field in which the modern tools of molecular and cell biology are being married to state-of-the-art technology for noninvasive imaging including small animal imaging with MRI, ultrasound, and optical imaging. The goal of this project is to develop technologies and assays to image molecular/cellular events in living cells/organisms.

Requirements: a Ph.D. in biochemistry, molecular biology, or alternatively in MRI or ultrasound. Some experience with molecular biology, cell culture, and immunological techniques is useful. Application process: If interested, please send a letter describing your research interests, curriculum vitae, and the names and addresses of three references to:

George F. Vande Woude
333 Bostwick Avenue N.E.
Grand Rapids, MI 49503
Telephone: 616-234-5306
FAX: 616-234-5307
E-mail: george.vandewoude@vai.org

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POSTDOCTORAL POSITIONS

Up to five Postdoctoral positions supported by NIH grants available immediately at Storm Eye Institute, Medical University of South Carolina (at Charleston, South Carolina), to study fundamental questions of vision and ocular diseases in the following areas: (1) mechanisms of rod and cone visual transduction **(R.K. Crouch)**, (2) angiogenic inhibitors and retinal neovascularization **(J-x. Ma)**, (3) role of intergrins and G protein-coupled receptors in the regulation of trabecular cell function **(C.E. Crosson)**, 4) visual pigment/GPCR activation **(M. Kono)**, and 5) molecular biology of retinal development and function **(B. Rohrer)**. Interested applicants should submit their curriculum vitae by e-mail to individual Principal Investigator at the following addresses: **R.K. Crouch; e-mail: crouchrk@musc.edu; J-x. Ma; e-mail: majx@musc.edu; C.E. Crosson; e-mail: crossonc@musc.edu; B. Rohrer; e-mail: rohrer@musc.edu;** and **M. Kono; e-mail: konom@musc.edu**. The applicants can reach each Principal Investigator by **Telephone: 843-792-3206**.

POSITIONS OPEN

SCHOOL OF MEDICINE
NEW YORK UNIVERSITY

POSTDOCTORAL POSITION

A Postdoctoral position is immediately available in the Biochemistry Department of New York University School of Medicine. Our research involves one of the essential polymerases in DNA replication, primase, and its structure, functions, and interactions with other proteins. These studies use both prokaryotic and eukaryotic primases. Candidates should have a Ph.D. degree and a strong background in molecular biology together with a familiarity with molecular biological techniques.

For consideration, please forward full curriculum vitae with bibliography and description of research experience and names of three references to: **Dr. G. Nigel Godson, Professor and Chairman, Department of Biochemistry, NYU School of Medicine, 550 First Avenue, New York, NY 10016. Telephone: 212-263-5622; e-mail: godsog01@popmail.med.nyu.edu**. Please visit our **website: http://www.med.nyu.edu/Biochem/HomePage.html**.*EqualOpportunity Employer.*

POSTDOCTORAL FELLOW
Molecular Systematics of Fishes

The Ichthyology Department of the Natural History Museum of Los Angeles County seeks a Postdoctoral Fellow in molecular systematics of fishes to work on our two-year, NSF-funded project that concerns the phylogeny and evolution of basal gobioid fishes. Responsibilities include extraction, amplification, sequencing, and analysis of sequence data. The successful candidate will have a Ph.D. in organismal biology and evolution; emphasis in ichthyology and experience in generating DNA sequence data are strongly preferred. Applications will be accepted until April 15, 2002, for a start date of July 1, 2002. The salary will be $33,000 annually with medical and dental benefits included. Interested candidates should send curriculum vitae, reprints, three letters of recommendation (e-mail is acceptable: **e-mail: thacker@nhm.org**), and a statement of research experience and interests to: **Dr. Christine Thacker, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007**. *Equal Opportunity Employer.*

A **POSTDOCTORAL POSITION** is immediately available to investigate the role of phosphatase-encoding genes in tumor suppression. Ongoing studies include but are not limited to (1) dissecting the molecular pathways controlled by the PTEN tumor suppressor gene, (2) testing the association between phosphatases allelic variants and cancer susceptibility, and (3) determining the role of the CD148 protein phosphatase in normal epithelial tissues and during tumor progression. These projects involve state-of-the-art molecular and cell biology techniques as well as transgenic and gene-targeted mouse models. Experience in some of the following areas is highly desirable: gene targeting in mice, inducible gene expression, cDNA microarray analysis, and protein biochemistry. Applications are sought from highly motivated individuals with strong background in molecular biology/biochemistry. Please send curriculum vitae and the names of three references to: **Dr. Antonio Di Cristofano, c/o Human Resources, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111**. *Equal Opportunity Employer.*

POSTDOCTORAL and **JUNIOR FACULTY** positions for studying TGFβ/Smads in skin development and carcinogenesis. Visit **website: http://people.bcm.tmc.edu/~xwang/** for more information. Experience in cancer/developmental biology and generating knockout mice is preferred. Send curriculum vitae and three reference letters to: **Xiao-Jing Wang, Associate Professor, Molecular Cellular Biology, Baylor College of Medicine, Houston, TX 77030. E-mail: xwang@bcm.tmc.edu.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS, Pennsylvania State, University Park, Pennsylvania: Positions at both junior and senior levels are available immediately to study the regulation of large gene complexes in transgenic mice. Candidates are expected to develop recombination-based targeting methods in large-insert cloning vehicles such as BAC/YAC/pClasper. Expertise in one or more areas including handling of large inserts, vector modifications, construction and screening of libraries, bacterial and yeast homologous recombination systems, and transgenic mouse analysis are desired. Interest in developing disease models by using large-insert transgenic methods is appreciated. These positions are based at the Pennsylvania State University. This research program is a collaborative effort among **Dr. Cooduvalli Shashikant**, Penn State; **Dr. Frank Ruddle**, Yale University; and **Dr. Adrian Hayday**, University of London. Send curriculum vitae, statement of research interests, and three recommendation letters to: **Dr. Cooduvalli Shashikant, Position Number S–12865, 324 Henning Building, College of Agricultural Sciences, The Pennsylvania State University, University Park, PA 16802. E-mail: css13@psu.edu**. For more information, visit **website http://www.das.psu.edu/user/shashi**. *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately in the NIH/NIAID/Laboratory of Allergic Diseases to study heterotrimeric G protein signaling and regulator of G protein signaling (RGS) proteins in inflammatory cells using biochemical techniques and knockout mice. A Ph.D. and/or M.D. and experience in molecular and cellular biology is required. Interest and/or experience in animal models is desirable. Salary based on relevant experience and education. Send cover letter, curriculum vitae, summary of past work, and names and addresses of three references to:

Dr. Kirk Druey, Laboratory of Allergic Diseases
Molecular Signal Transduction Section
NIAID/NIH/Twinbrook II, Room 200E
12441 Parklawn Drive
Rockville, MD 20852 U.S.A.
E-mail: kdruey@niaid.nih.gov
Website: http://www.niaid.nih.gov/dir/labs/LAD/molecular.htm

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POSTDOCTORAL RESEARCH POSITION in behavioral neuroscience and neuropsychopharmacology laboratory. Research focus is on the neurochemical mediation of attentional processing in animal models of aging and various neuropsychiatric disorders (Alzheimer's dementia, schizophrenia, drug abuse) using the simultaneous measurement of transmitter release in multiple brain sites (microdialysis and selective biosensor techniques) in rats as they perform attentional tasks. Previous experience with microdialysis desired but not necessary. Please submit curriculum vitae and the names of three references to either: **Drs. John P. Bruno (e-mail: bruno.1@osu.edu; website: http://www.psy.ohio-state.edu/bruno)** or **Martin Sarter (e-mail: sarter.2@osu.edu; website: http://www.psy.ohio-state.edu/sarter), Department of Psychology, The Ohio State University, Columbus, OH 43210**. *The Ohio State University is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and individuals with disabilities are encouraged to apply.*

POSTDOCTORAL POSITION available immediately to study the role of taurine in age-related memory loss. Applicants must have a Ph.D. and laboratory experience in extracellular recording from brain slices (LTP), behavioral assessment of learning/memory, and/or molecular biology techniques. Applicants should send curriculum vitae, a brief statement of research interests, and contact information for three references to: **Dr. Ralph Dawson, Jr., Department of Pharmacodynamics, Box 100487, University of Florida, Gainesville, FL 32610. E-mail: dawson@cop.ufl.edu**.

POSITIONS OPEN

POSTDOCTORAL/STAFF FELLOWSHIP positions are available immediately to study the development and characterization of novel modulators of innate immunity with a special emphasis on the response to biowarfare agents. Areas of interest include *in vitro* and *in vivo* studies of the biological and therapeutic activity of CpG DNA, cytokines, chemokines, and hormones using mouse and primate models. Positions are located on the main campus of the National Institutes of Health in the laboratory of **Daniela Verthelyi**, Laboratory of Immunology, Division of Therapeutic Proteins, Food and Drug Administration. Qualifications: Ph.D. and/or M.D. Experience in immunology or molecular biology useful but not required. Willingness to learn and perform animal procedures required. Salary range is $45,000 to $55,000 depending on experience. To apply, all interested applicants should reference **Verthelyi-PD** on curriculum vitae and sent it along with the names/contact information for three references to **e-mail: recruitment@cber.fda.gov** or mail to: **1401 Rockville Pike, HFM–123, Rockville, MD 20852-1448**.

Established Investigator in lipid metabolism seeks **POSTDOCTORAL FELLOWS** for two NIH-funded projects: (1) mechanism of dyslipidemia produced by HIV protease inhibitor drugs and (2) proteoglycan alterations in diabetes and their metabolic consequences (*J. Clin. Invest.* **105**:1807–1818). Prior experience working with mouse models and experience in proteoglycan biochemistry desirable. Send curriculum vitae along with three references to: **Neil S. Shachter, M.D., Department of Medicine, Division of Preventive Medicine and Nutrition, Columbia University, 630 West 168th Street, PH 10-305, New York, NY 10032-3702. E-mail: nss5@columbia.edu; FAX: 212-305-9893**. *Columbia University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE

The Department of Ecology and Evolutionary Biology seeks a Postdoctoral Research Associate for two years to assist in teaching human morphology to medical students. Candidates must have a Doctorate, teaching experience in cadaver-based anatomy, and research interests in evolutionary morphology. The second semester will be available for full-time research. Submit curriculum vitae, representative reprints, and the names of three individuals who can be contacted for letters of reference to: **Dr. G.E. Goslow, Jr., Box G–B210, Brown University, Providence, RI 02912.** Applications received by April 1, 2002, will receive full consideration. *Brown University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION AT NIH

Molecular biology of the chemokine system. A position is available for a Postdoctoral/Research Fellow position to study the regulation of expression, signaling, and function of lymphocyte chemokine receptors. A Ph.D. and/or M.D. and a background in molecular biology are required. Salary will be determined based on education and experience. Will accept applications through April 15, 2002. Send résumé to: **Joshua M. Farber, M.D., Laboratory of Clinical Investigation, NIAID/NIH; e-mail: jfarber@niaid.nih.gov; Telephone: 301-402-4910**. *NIH is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION is available immediately to determine the mechanisms by which the tumor promoter dioxin and the aryl hydrocarbon receptor signaling pathway exert their activities. Approaches include use of flow cytometry, adenoviruses, and DNA microarrays. Applicants should have a Ph.D. with training in cell and molecular biology. To apply, please send curriculum vitae, brief description of research interests, and the names of three references to: **Dr. Hollie Swanson, Department of Molecular and Biomedical Pharmacology, MS 305 UKMC, University of Kentucky, Lexington, KY 40536-0298. E-mail: hswan@uky.edu**.

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIPS
Oncolytic Viruses/Glioma Invasion

Excellent opportunities for young Scientists are available through funded Postdoctoral positions in: (1) oncolytic viruses (*JNCI* **93**:903, 2001; *Science* **282**:1332, 1998) and (2) mechanisms of invasion (*Nat. Neur. Rev.* **2**:502, 2001; *Clin. Canver Res.* **5**:845, 1999) in brain tumors.

Applicants must have a Ph.D., M.D., or equivalent as well as experience in virology, molecular biology, biochemistry, cell biology, or related disciplines. Applications accepted on an ongoing basis. Please submit curriculum vitae, a letter of research interests and goals, and the names of three references to: **Peter Forsyth, Department of Oncology, Tom Baker Cancer Center, 1331 29th Street N.W., Calgary, AB T2N 4N2 Canada. E-mail: peter.forsyth@cancerboard.ab.ca**.

Three **POSTDOCTORAL POSITIONS** available immediately to study developmental neurobiology of mental diseases, developmental effects of prenatal cocaine exposure, and developmental plasticity of somatic pain circuitry. The projects employ real time RT-PCR, *in situ* hybridization, and Western blots. The candidate must be familiar with these techniques and hold Ph.D. in molecular biology, neuroscience, or related fields. Contact: **Dr. Michael S. Lidow, Department of OCBS, University of Maryland, HHH, 5–A–12, 666 West Baltimore Street, Baltimore, MD 21201. E-mail: mlidow@umaryland.edu**.

ANNOUNCEMENTS

ENVIRONMENTAL SCIENCE ACADEMIC MINIGRANTS
To Be Awarded June of 2002

Environmental Defense, a national not-for-profit environmental organization, requests letters of inquiry that describe potential proposals for research projects at a maximum cost of $15,000 related to the following topics: marine reserves, aquaculture and terrestrial animal agriculture, ecosystem restoration, endangered species conservation, invasive species, and climate change. Inquiries will be entertained for work on these topics anywhere in the United States. In addition, special consideration will be given to inquiries for work concerning the Pacific coasts and Pacific territorial waters of the United States (including Hawaii, Mexico, and Canada). Inquiries for funding of work in other countries are discouraged. Letters should be no longer than one page and should describe the research topic, its relevance to environmental policy, amount of funding requested, and major expenditure items. Letters are due no later than March 29, 2002. **PRINCIPAL INVESTIGATOR** must hold the equivalent of faculty position at a public or private college or university. For details, see the Environmental Defense **website: http://www.environmental defense.org/minigrants**. Send letters to: **Monique Forte, Environmental Defense, 257 Park Avenue South, New York, NY 10010**. No telephone calls, please. *Environmental Defense is an Equal Opportunity Employer.*

WORKSHOPS

BIOINFORMATICS TOOLS FOR COMPARATIVE GENOMICS
University of California
Berkeley/LBNL/NHLBI
April 29–30 and May 1–3, 2002

Designed for Postdoctorals, medical, and especially cardiovascular Researchers interested in applying bioinformatics tools to their research. Techniques include database searches, annotation, SNPs, microarray analysis, and more. No tuition. For further information, **Telephone: 510-486-4162; e-mail: pgaworkshop@lbl.gov**. Register before April 1, 2002, at **website: http://pga.lbl.gov/workshop**.

GLOBAL OPPORTUNITIES

TWO TENURE-TRACK FACULTY POSITIONS AVAILABLE
Institute of Biological Chemistry
Academia Sinica, Taiwan

We seek applicants at the level of **ASSISTANT RESEARCH FELLOW** (equivalent to **ASSISTANT PROFESSOR**) but may consider more advanced faculty. Applicants should have a Ph.D. and/or M.D. degree plus postdoctoral training. The ability to pursue independent research is of critical importance for consideration. Areas of particular interest include structural biology, molecular biophysics, proteomics, membrane/receptor biology, integrative biology, and related areas in biochemistry. Investigators employing high-throughput experimental genomic approaches that extend existing strengths at IBC are particularly encouraged. The Institute will provide excellent start-up funds and laboratory space as well as state-of-the-art common facilities. Interested applicants are requested to send (1) description of previous research experience; (2) representative reprints of research papers; (3) description of proposed research; (4) résumé; and (5) three letters of recommendation to: **Dr. Andrew H.-J. Wang, Director of the Institute of Biological Chemistry, Academia Sinica, Nankang, Taipei, Taiwan** by April 15, 2002. Inquiries can be made via **Telephone: 886-2-27855696, Extension 1015; FAX: 886-2-27889759; e-mail: tan@gate.sinica.edu.tw**.

Korea Institute for Advanced Study invites application for **RESEARCH FELLOWS** in computational protein folding studies. This is for a Physicist/Chemist/Biologist trained in molecular modeling and computer simulation for 3-D structure prediction of proteins. Salary ranges: $18,000 to $25,000 with additional $5,000 for research expenses. The appointment is for two years and is renewable up to two additional years. Curriculum vitae, a research plan, and three letters of recommendation should be sent by **e-mail: protein@kias.re.kr** preferably by April 15, 2002.

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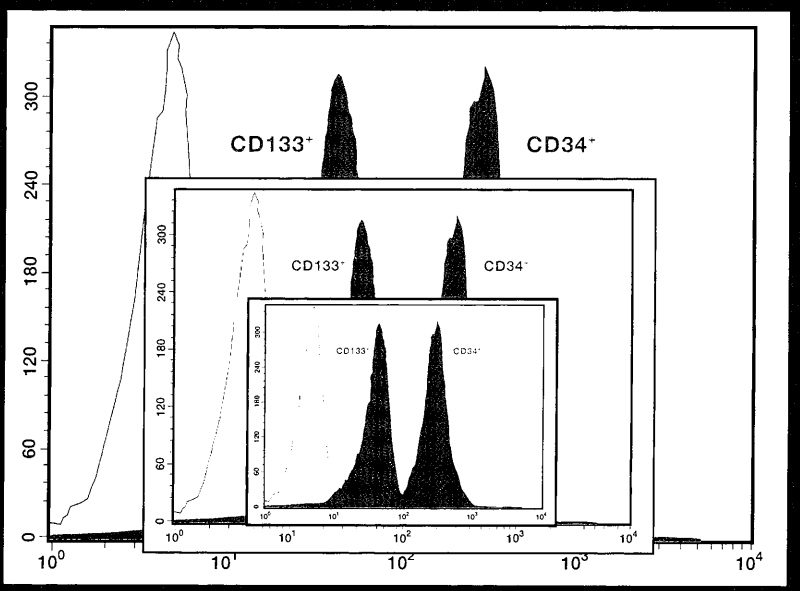

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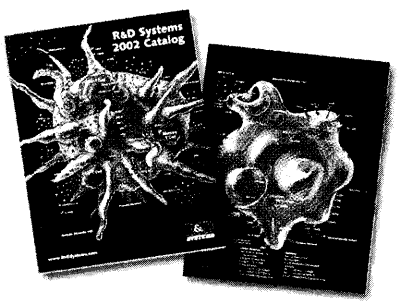

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