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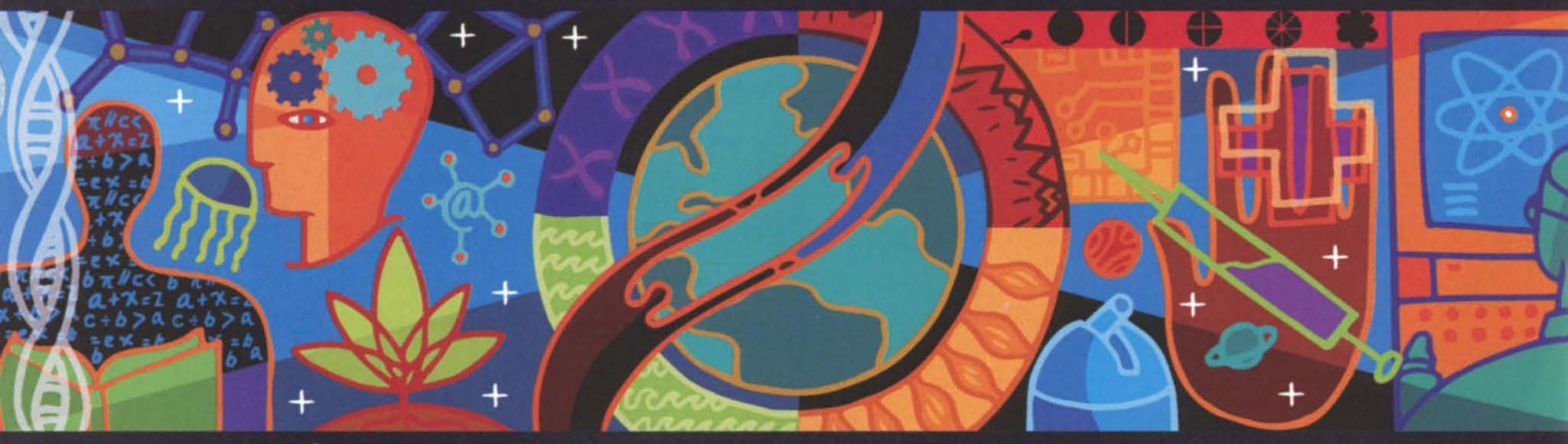

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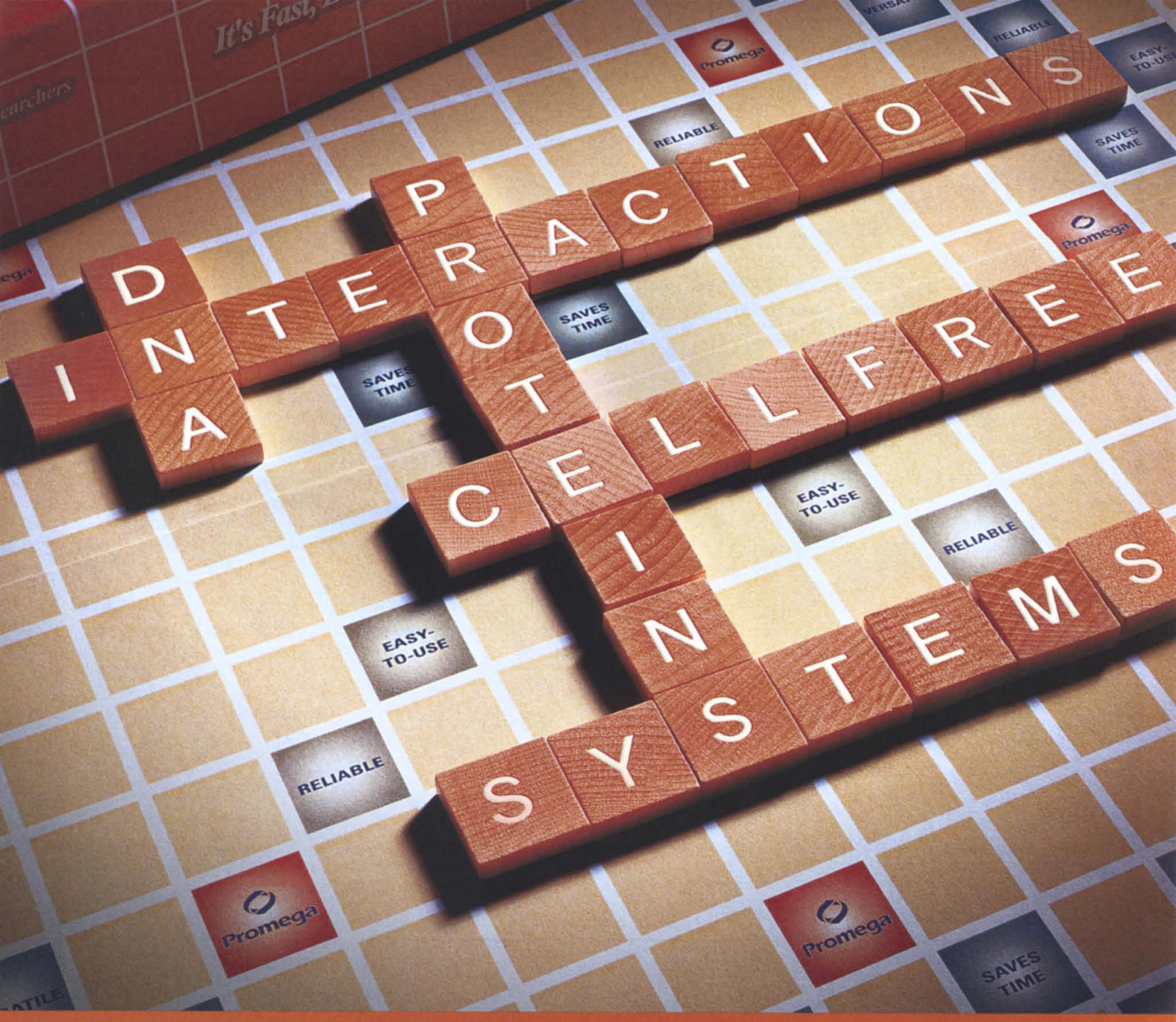

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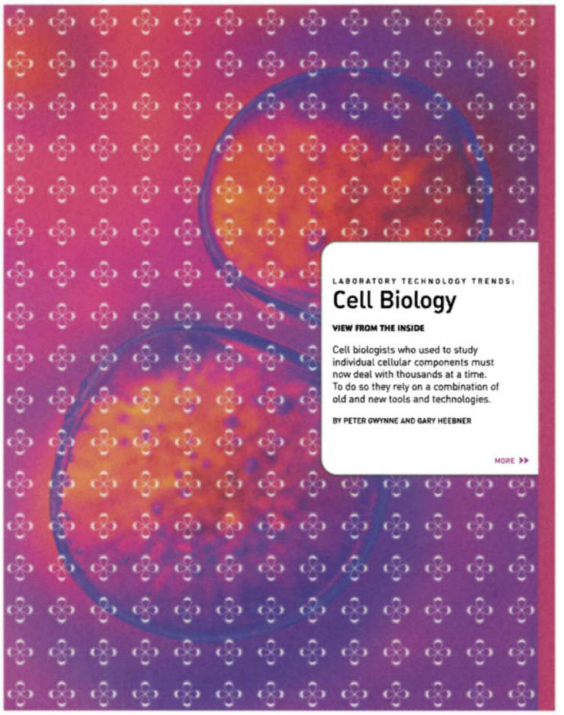

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VIEW FROM THE INSIDE

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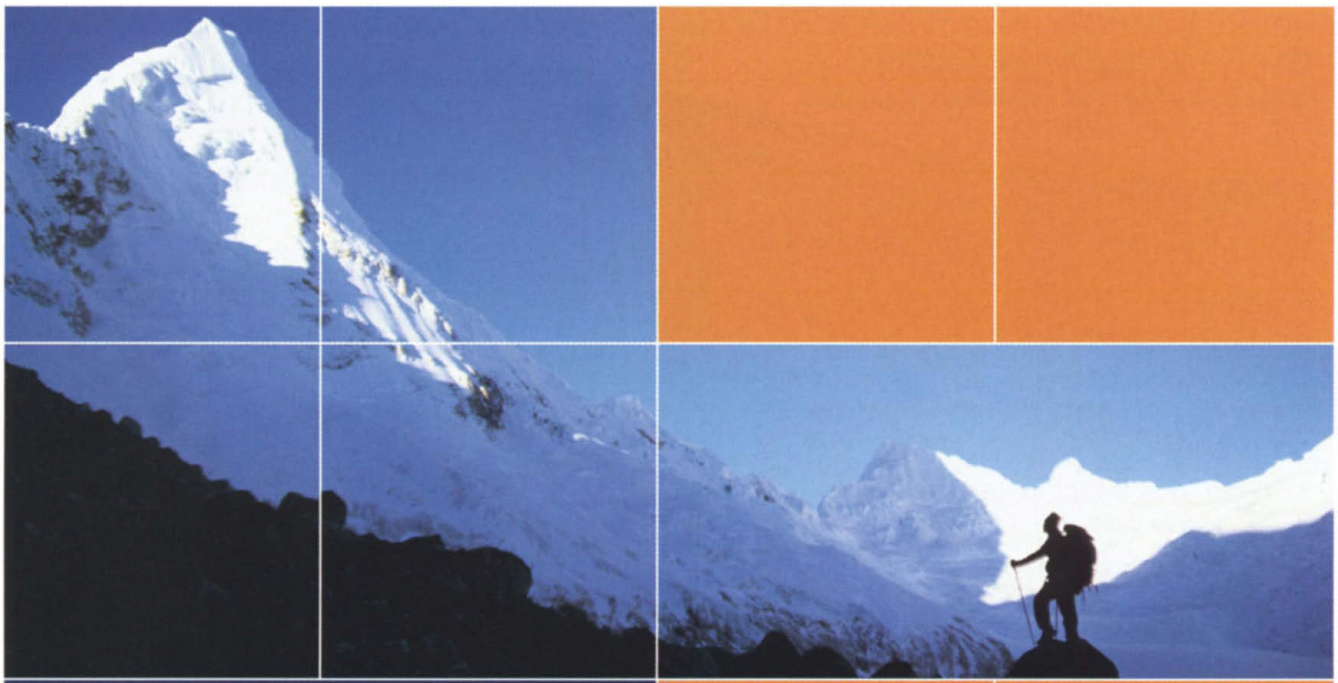

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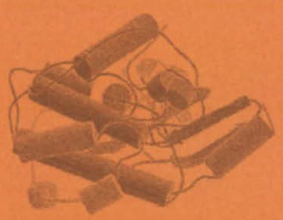

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PROOFING TOOL

Unfortunately for scientists, many scientific terms are too specialized to be included in the dictionaries in word processors such as Microsoft Word. In Word, this lack of recognition results in the sea of red squiggles indicating misspelling. The sciPROOF software package by SCIPROOF, LLC, of Portland, Oregon, addresses this issue, among others, for users of Microsoft Word 2000.

sciPROOF integrates with Word's "as you type" spell-check function to reduce the number of spurious misspelling reports (by 85% in the crystallography, genetics, and cell biology papers tested, excluding references). Document spell-check can also be performed using the sciPROOF interface, which is visually similar to the Word spell-check interface, with additional functionality.

According to Thomas Perrin, cofounder of SCIPROOF, LLC, with Werner Montross, "sciPROOF has its own spell-checking engine, which works with Microsoft Word's spell-checker. First, Microsoft's spell-checker evaluates a word. If the word is not recognized it is sent to sciPROOF for evaluation." SciPROOF then checks words and acronyms against a database of over 200,000 terms derived from the National Library of Medicine (NLM) and the National Center for Biotechnology Information (NCBI). This addition would be valuable as a static database, but Perrin notes that because new terms are constantly added to scientific vocabulary, SCIPROOF plans to periodically offer updated database downloads in response to terminology shifts and user feedback.

Another feature of sciPROOF is a built-in glossary and a Medline search function, both of which can be accessed from the document text or via the spell-check interface. Although the glossary is extensive, it will probably be of more use to collaborators or reviewers than to writers, who presumably understand their own terminology. The online Medline search function, while not designed to replace the NLM interface, is very useful for rapidly performing cursory literature searches with minimal impact on the writing process.

One of the most appealing aspects of sciPROOF is its ease of use. The program is so intuitive that downloading sciPROOF will probably take longer than learning to use it. Future releases of sciPROOF will incorporate sets of style requirements for specific journals, and medical dictionaries will soon be available to further broaden the lexicon. Perrin also expects that the program will expand the existing NLM search function to automate reference handling.

sciPROOF is compatible with Microsoft Word 2000 running under Microsoft Windows 98, 98SE, NT 4.0, or 2000, but the software does not function with earlier versions of Microsoft Word or with other word processors. An XP-compatible version will be available for purchase or as a free download for existing users. A Macintosh version is planned. **—Jeremy Peirce**

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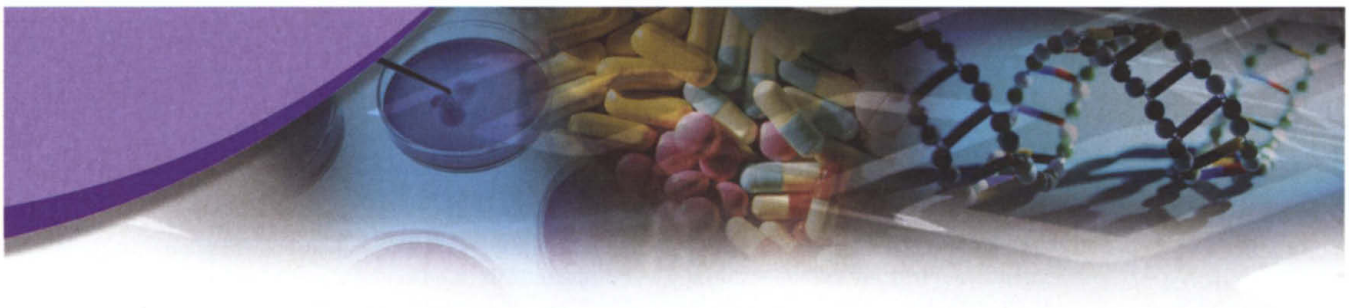

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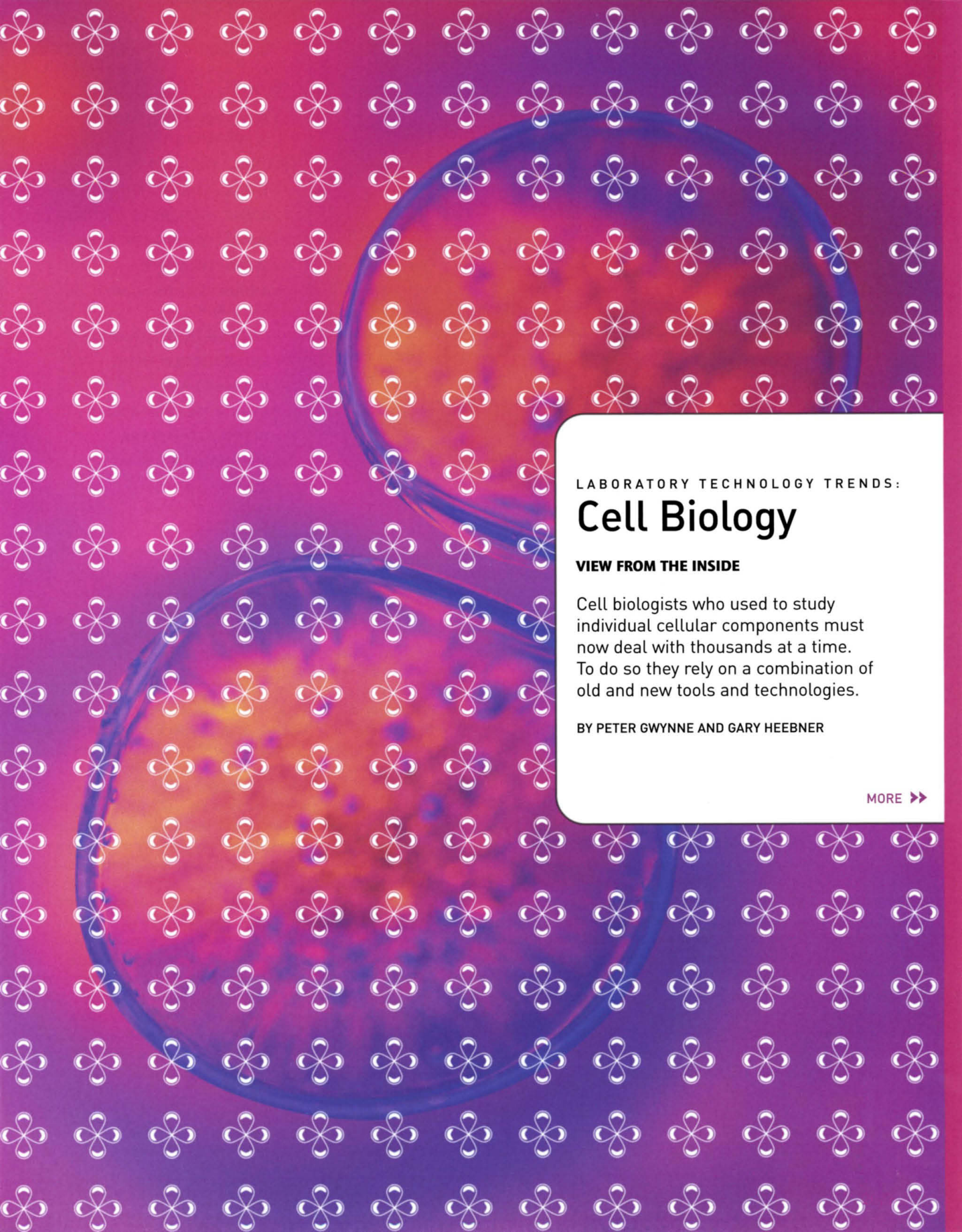

LABORATORY TECHNOLOGY TRENDS:

Cell Biology

VIEW FROM THE INSIDE

Cell biologists who used to study individual cellular components must now deal with thousands at a time. To do so they rely on a combination of old and new tools and technologies.

BY PETER GWYNNE AND GARY HEEBNER

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LABORATORY TECHNOLOGY TRENDS:

Cell Biology

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The study of cells dates back to the 1670s when Anton van Leeuwenhoek, a Dutch businessman with no formal scientific training, made some of the first discoveries in cell biology. Using one of the simple light microscopes that he had invented, he discovered bacteria, tiny parasites, blood cells, and more.

Within the past two decades, cell biology has advanced at a rate unimaginable to van Leeuwenhoek and his 17th century colleagues. It has become an integrative discipline that uses the tools of genetics and molecular biology to piece together the complex inner workings of the living cell. But it still relies heavily on the ability to visualize cells. "In order to investigate mechanisms you really need to look at the cellular level," says Kim Warren, vice president and technical director of **Cambrex**. "Visualization within the cell is hot," agrees Brian Conkle, president of **Axxora LLC**. "It's important to be able to see signaling and cell trafficking and to explore both how cells communicate with other cells around them and how communication occurs inside the cell."

TOOLS FOR A SYSTEMS APPROACH

Improved methods of visualizing cells represent just one recent advance in tools for cell biology. As life scientists sequence growing numbers of genomes, they approach the day in which they will be able to define the connections between genetic makeup and cellular function. "We hear more people talking about a systems approach – trying to find how components of the cell and individual cells interrelate and how those components change," says Abe Couse, product manager for proteomics at **BD Biosciences** Clontech.

Answering those questions involves studying an increasingly higher level of complexity. "In the past, research was primarily concerned with a single protein and its function," explains David George, product manager for cell biology at BD Biosciences Pharmingen. "Now you can ask more global questions." Shou C. Wong, R&D manager for proteomics at **Novagen**, points out how vendors have reacted to the new situation. "Tools have become more powerful, enabling you to study more than one protein at a time – to look at interactions with other proteins or a group of proteins," he explains.

An extra demand for tools stems from the fact that sequencing projects designed to answer global questions have produced overwhelming amounts of experimental data. The existence of posttranscriptional modification in cells has further complicated the issue of making the connection between the genome and cellular function. "It has been clear for at least a decade that the rate of accumulation of data has been faster than the rate of improvement in computer power and data storage," says Tim Burland, who was vice president and general manager of **DNASTAR** until last month. "That's why it's important to have software that can access data effectively."

More routine tools and techniques are equally critical to cell biology. In addition to microscopy and bioinformatics, cell and tissue culture and cell separation and fractionation help to form the foundation for today's cell biologists. The field advances on the strength of both old and new technologies.

However varied their products, vendors of tools have two main themes in mind. "Ease of use is becoming more critical," says Axxora's Conkle. "So is one-stop shopping. The industry is really moving to consolidation from a purchasing point of view, including electronic purchasing. We try to keep researchers at the bench rather than on the phone. We don't want them doing things they shouldn't be doing."

UNDER THE HOOD

To study cells, researchers must isolate them and then grow them in a controlled way. Here, scientists face the challenge of maintaining a sterile environment. If bacteria, mycoplasma, or viruses infect a cell culture system, the cell dynamics may be altered or the cells may even die.

To create and maintain sterile surroundings for cell culture work, researchers often use laminar flow hoods, sometimes referred to as biosafety cabinets. "Biological safety cabinets are where the work actually happens," says Alan Campbell, product manager for carbon dioxide incubators at the Thermo Forma business unit of **Thermo Electron Corporation**. "Unlike a fume hood, a biosafety cabinet makes sure that the air outside stays outside and the air inside stays inside, so that you protect both the people working on the organisms in the chamber and the organisms themselves." The cabinets are critical from three points of view, according to Ralph Markee, brand manager at **Jouan Incorporated**. "They protect the researcher from bacteria, viruses, and pathogens of opportunity that may be in the culture," he says. "They protect the cultures themselves by preventing cross-contamination between individual cultures. And they protect the environment."

Laminar flow hoods work by producing a laminar sheet of air that moves through the cabinet without creating pockets of turbulence that might compromise the sterile environment. Typically, the hoods take in room air and sterilize it through the microscopic pores of HEPA (High Efficiency Particulate Air) filters.

Individual manufacturers, which also include **The Baker Company** and **Labconco**, add their own characteristics to their biosafety cabinets. "The

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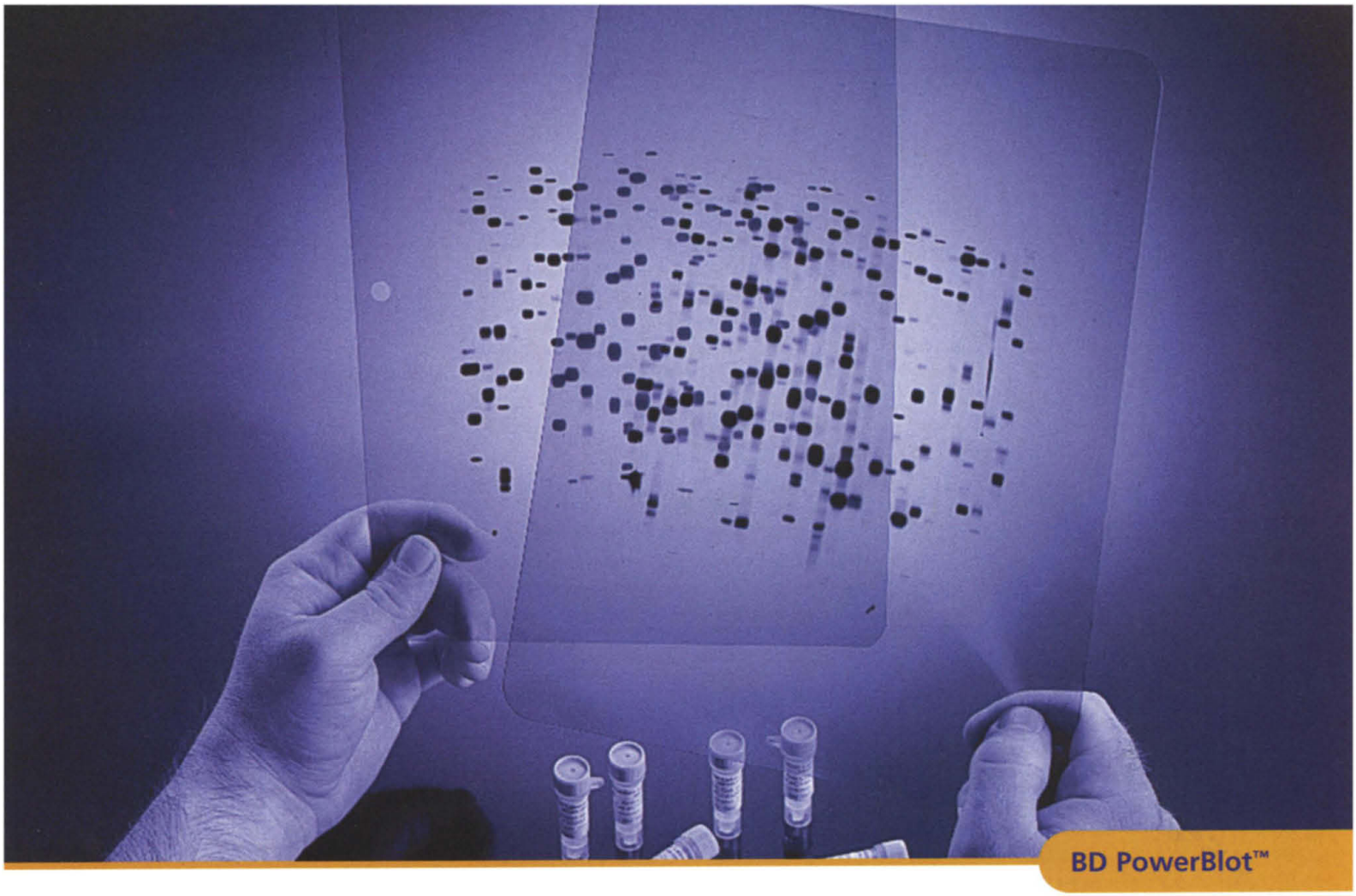

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LABORATORY TECHNOLOGY TRENDS:

Cell Biology

Jouan hood has an anemometer in the chamber and a second anemometer in the discharge air flow," says Markee. "If the air flow in the chamber is disturbed by anything, it alarms and tells the operator that an unsafe situation exists." Thermo Forma's hoods "have interior walls all made of one piece, preventing them from harboring contaminants and making them easy to clean," says Campbell. "Our cabinets feature an oversize motor that extends the life of the HEPA filter from five years to seven years or so. We also have some built-in features to keep air circulation high even when the cabinet is heavily in use."

THE CO_2 CONNECTION

HEPA filters have their limitations. "They're fine for airborne contaminants, but they won't control the growth of bacteria in media spills or dirt in the incubator," says Markee. Alternative approaches also offer less than perfect performance. Copper chambers, for example, keep interior walls sterile but don't solve airborne problems. Sterility cycles that typically raise the incubator's temperature to 90 degrees C for nine hours maintain cleanliness at the expense of time. "A whole cycle can take as long as 26 to 27 hours," Markee notes. "That's a long time to have your culture somewhere else."

Incubators must deal with new realities of cell biology research. "Lately we have seen more chances of contamination and variations in cells' environments, since many researchers need to take the culture in and out frequently to do more cell culturing," says Yuichi Tamaoki, manager of biomedical products engineering at **Sanyo**. "In order to eliminate any possibility of contamination on the chamber surface and in the air, we developed the incubator with an ultraviolet lamp and a copper enriched stainless steel chamber. This enables our incubators to create a safe environment without interrupting cell culturing."

Today the most popular option is an automatic carbon dioxide incubator. "They are taking on a great role in cell biology research," says Markee. A recent market survey by the Laboratory Products Association indicates that sales of such products increased at an annual rate of 5 percent in a year during which general laboratory purchases showed no growth.

Researchers have several reasons for preferring CO_2 incubators. "They really simulate an in vivo environment for your in vitro culture," explains Thermo Forma's Campbell. "They control all the important parameters – temperature, humidity, and pH [via the CO_2 level]. In some cases they regulate oxygen. That's important because internal cells don't usually see 20 percent oxygen."

Thermo Forma aims to satisfy several needs in its CO_2 incubators. "Our customers have told us that they expect an incubator to sit there and culture reliably for years on end," Campbell says. "We also spend a lot of time working on ease of use. We make the units very easy to keep clean. One of the facts about CO_2 incubators is that by creating an ideal environment for things to grow in, you have an ideal environment for other things to grow. If you make it easy to clean, you can ensure that you grow only what you want." Beyond that, he adds, "we have an extremely wide model range."

Jouan also offers a range of CO_2 incubators. "Shelves and air ducts are designed to cover as little space as possible so that spills and dirt can be cleaned up," Markee says. Sanyo's incubators come with a PID-controlled infrared sensor that is not influenced by humidity. "This sensor enables scientists to keep the CO_2 level stable and recover it as quickly as possible when it is disturbed," says Tamaoki. "We have a patented air chamber to give you rapid thermal recovery after a door opening. This minimizes thermal shock." **Kendro Laboratory Products** also manufactures CO_2 incubators.

CONSIDERATIONS OF CULTURE

The need for sterility also applies to the glassware or plasticware used to prepare media and reagents and to grow cells. Autoclaves achieve it for metal and glass devices and gamma radiation for disposable plastic culture flasks and other plasticware, such as that provided by BD Biosciences Discovery Labware, **Corning** and **Nalge Nunc International**, among other vendors. Sterilization methods all have the goal of killing contaminating organisms while not altering the surface of the flask or vessel and possibly creating a surface that will prevent cells from flourishing.

In early cell culture research, scientists prepared media from scratch and sterile filtered them. That approach was both laborious and vulnerable to contamination. Worse, any contaminants introduced during the procedures could remain undetected until the media were actually in use. "Nobody likes to make their own media," says Cambrex's Warren. "Researchers also face the issue of tissue preparation and preparation of cells. They may not have the right channels to acquire primary cells, and may not have the time to prepare them even if they can acquire them. We have media specifically designed for primary cells; we can also supply the primary cells themselves." The advent of prepared cell culture media and sterile filtered serum products from such companies as Cambrex, **Invitrogen**, and **Sigma-Aldrich** has taken much of the guesswork out of the process, making cell culturing easier and more routine.

Traditional cell culture media usually contain serum, which is full of undefined growth promoting factors. These media introduce significant variability from lot to lot of serum, making it difficult to standardize growth conditions. Defined (or serum-free) media that can sustain the growth of even some of the most finicky cells in culture are also commercially available. The defined nature of these media allows researchers to add specific growth factors to examine the effect of these substances on normal cells. "We offer both serum-containing and nonserum media," says Warren. "We also have a number of 'complex media' in which we reduce the serum or add a number of other components to permit the growth of primary cells." Vendors that offer defined media will generally custom develop and produce serum-free media for specific cell lines.

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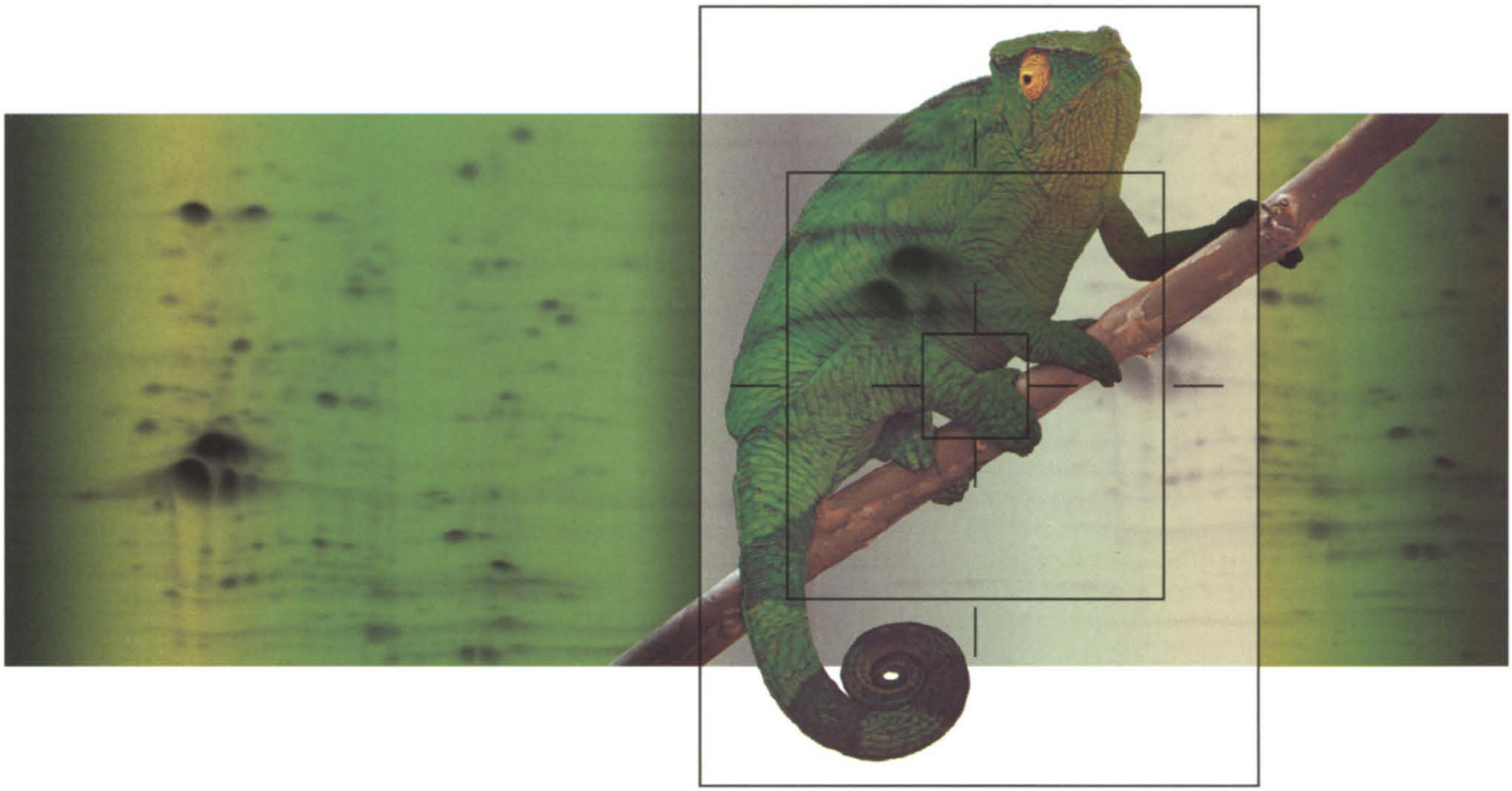

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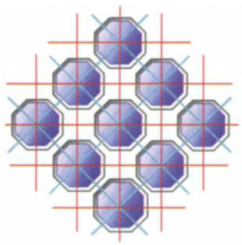

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Young Site on Aging Research

October marked the first birthday of an online resource run by *Science*. The **SAGE Knowledge Environment** represents a pioneering effort to help the broad community of scientists interested in aging stay up-to-date on research in their field. "Specialists in aging are spread over a wide range of disciplines," says Kelly LaMarco, the site's editor. "We thought that this was a research community that would benefit from having an electronic community."

The site has four main sections: literature and news; community; resources; and highlights. Original content in the literature and news section includes commentary and review articles written by scientists as well as news articles written by journalists. Site editors rely partly on an active scientific advisory board to keep SAGE KE current in terms of coverage of new findings. Items accessed by visitors divide about evenly between articles by scientists and news articles by journalists. "We're happy we decided to include news," LaMarco says. "Our Noteworthy This Week section is quite popular with our readers." In fact scientists seem to like the entire site. About 5,000 different individuals visit the site each month, each staying there for 25 to 35 minutes on average.

As to subject matter, LaMarco says, "We focus mainly on basic mechanisms of aging and less on pure clinical papers." However, she adds, AAAS and the American Society for Family Physicians plan to introduce a website on aging for practitioners that will contain coverage of clinical studies on aging and age related diseases.

sageke.sciencemag.org

SEPARATION AND ISOLATION

To separate and isolate cellular components, scientists typically use centrifugation. When the supernatant from a disrupted cell is centrifuged at a specific g-force, subcellular components can be selectively pelleted to the bottom of the centrifuge tube. Successive centrifuging of each remaining supernatant at higher and higher g-forces will separate smaller and smaller cellular components, creating relatively pure preparations of nuclei, mitochondria, ribosomes, and other subcellular structures.

Antibodies provide ideal tools for separating mixtures of cells, owing to their great diversity and specificity. Antibodies can be attached to chromatography columns and used to bind cells that possess the antigens recognized by the specific antibodies. **Pierce Biotechnology**, **R&D Systems**, and others offer several products for cell separation.

Researchers can also use magnetic particles to sort cells. Antibodies specific for a particular cell of interest are covalently bonded to magnetic particles. A mixture of cells is then incubated in a solution with the magnetic antibodies. When the entire reaction mixture is exposed to a magnetic field, the field retains the cells of interest. Removing the magnet frees the cells again.

Various companies, including **Dynal Biotech** and **Miltenyi Biotech**, have developed cell separation products based on magnetic particles. Some of the particles even consist of materials that naturally degrade without adversely affecting cell function. "Magnetic bead technology is very simple and can be automated," says Øystein Åmellem, director of R&D for Dynal Biotech. "It can be used in high throughput applications as well as in small-scale research labs. It sits very well with the strategy of many companies, such as Roche and Beckman Coulter, to increase output using automation and robotic systems."

The firm's Dynabeads have several unique characteristics. "We have a very stable bead to fit both ends of the market, from basic research to automated high throughput situations," Åmellem says. "They are very reliable in automation. They will behave consistently run after run."

Another promising use of Dynabeads occurs in immunotherapy. "We utilize the property that Dynabeads are similar in size to cells," says Åmellem. "Dynabead coupling of two antibodies activates human T cells ex vivo. The beads are removed before the T cells are reinfused back into patients suffering from various kinds of cancer and HIV."

SEEING THE LIGHT

After separation and isolation comes visualization. Cell biologists need to see the results of their experiments. "We're seeing more interest in dynamic studies that require more miniaturization and technology that allows researchers to take live action pictures," says Conkle of Axxora.

Several techniques permit scientists to tag cellular components in such a way that they can spot them statically or dynamically. Researchers frequently use antibodies tagged with labels such as fluorescein to identify and locate specific proteins in or on a cell. Antibody based probes are ideal for identifying specific cell populations based on differences in their cell surface proteins or markers. Scientists can also use such antibodies in histochemical applications. In those cases they fix a cell in paraffin and then stain sections of the cell with antibody for a specific molecule. These tagged cells can be identified using microscopy, fluorescent readers, or flow cytometers. **Molecular Probes** provides many of the fluorescent labels used with antibodies. And companies such as **Midland Certified Reagents** and Sigma-Aldrich are primary manufacturers of the stains and dyes used in these detection systems.

Fluorescent proteins have also played a key role in advancing cell biology research efforts. One of the most interesting is green fluorescent protein (GFP), a fluorescent molecule found in a jellyfish. Scientists can incorporate GFP into other systems that allow the visual location of biomolecules in living cells. And they increasingly apply variants of GFP with rapid turnover rates to kinetic studies in mammalian systems. "Any fluorochrome that has been used traditionally is now being applied to work in cell trafficking," says Conkle of Axxora.

The simplest way to spot stains and other probes is by using a microscope. Indeed, it was van Leeuwenhoek's perfection of the simple light microscope that allowed scientists to examine and discover the inner workings of the cell. That laid the foundation for cell biology and pathology, a related field that involves the study of structural changes in cells and the ways in which those changes relate to the diagnosis of disease.

Light microscopes have advanced hugely since van Leeuwenhoek. Today, **Carl Zeiss**, **Leica Microsystems**, **Nikon**, **Olympus**, and other manufacturers offer instruments capable of 0.2 micron resolution. Light microscopes and fluorescence microscopes will remain essential tools for cell biology for many years.

FROM STATIC TO DYNAMIC

Several new visualization technologies have emerged in recent years. In particular, three-dimensional laser scanning confocal microscopy (LSCM) has become established as a tool for obtaining high-resolution images and 3-D reconstructions in cell biology research. "In the past, confocal microscopy was a tool for static morphology," says Werner Knebel, head of application confocal laser scanning microscopy at Leica Microsystems. "Now it can be used to look at dynamic processes where you bleach out specific areas in the cell and see how fast the dye is recovering in those areas. Con-

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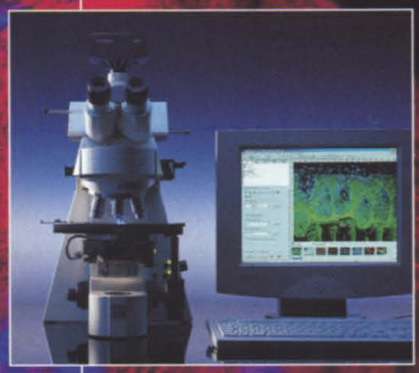

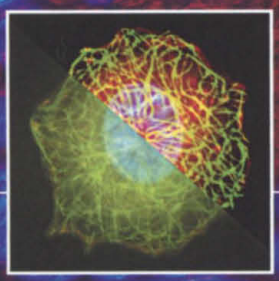

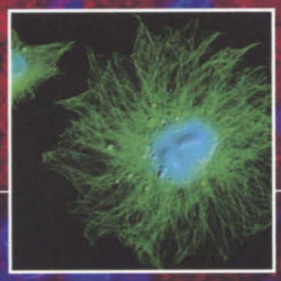

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ventional microscopes could never provide this information."

The technique involves expanding a beam of laser light to make best use of the optics in the objective. A confocal aperture is placed in front of the photodetector, in such a way that the aperture blocks the out-of-focus fluorescent light emitted from the specimen outside the focal plane. That greatly reduces interference from above and below the focal plane.

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

Confocal microscopy has particular value in studies that involve GFP. Leica has developed the AOBS, an acoustic optical beam splitter for its confocal microscopes that permits scientists to freely select the wavelengths at which they want to observe cells. "The AOBS has a very high transparency," says Knebel. "It gives 30 percent more light or enables scientists to use 30 percent less light with potential toxicity to the cells on which it shines. That means an increase in the system's sensitivity."

Leica's technology also introduces a new dimension into cell biology. "You can detect the effect of a new dye on the spectrum as the cell ages," explains Knebel. "You can see when a promoter has switched on a gene; the spectrum shifts as the process occurs. This is the first time that cell biologists have a clock in the cell."

ENTER THE ELECTRON

Light microscopy has one major limitation: the wavelength of visible light is too great to permit scientists to see even large molecules. At this point electron microscopy takes over. It has a unique feature that makes it particularly suitable for use in cell biology: its potential to describe structural details down to molecular dimensions in complex biological systems. Instruments produced by **Jeol** and **Hitachi**, among other vendors, can provide resolutions down to 0.1 nanometers.

Electron microscopy is based on the interaction of electrons with tissue or cellular components and electron-dense stains. Transmission electron microscopy involves the passage of electrons through a stained ultrathin section of material. Scanning electron microscopy can provide a three-dimensional view of a specimen's surface. Hitachi has developed a field emission scanning electron microscope with resolution of 0.2 nm at 30 kV. This instrument has a maximum magnification of 2 million times.

Electron microscopy is valuable, however, only if specimen preparation techniques maintain the structural integrity of the biological object. In other words, the ultrastructure must appear under the microscope just it would in a living cell.

A CLOSER LOOK

For an even closer look at cells, researchers can turn to atomic force microscopy (AFM), a technology capable of resolution down to 0.5 nm in biology. "It's a totally different way to study biological samples," says Irene Revenko, director of the biology department at Digital Instruments, a unit of **Veeco**. "We've had some spectacular results, such as being able to see channels open and close with time at the surface of membranes." Scientists increasingly use the technology to study living cells, visualize dynamic events, and measure molecular forces such as ionic or hydrogen bonding that maintain structure inside proteins. "These are really new and exciting data that you can get with AFM," says Revenko.

Atomic force microscopy uses a simple principle. A sharp tip (typically 10 to 20 nm) scanned over the surface of a specimen generates a signal that is used in a feedback loop to maintain the tip at a constant force (thereby obtaining height information), or constant height (to obtain force information) above the sample's surface. The tips, made of silicon or similar materials, extend down from the end of a cantilever. AFMs have the primary purpose of quantitatively measuring the roughness of surfaces with a nominal 5 nm lateral and 0.1 nm vertical resolution on all types of samples.

Advantages of AFM include its ability to image nonconducting surfaces and to work in liquids. "It is also nondestructive on the macro scale," Revenko says. "And sample preparation is similar to that for optical microscopy. You don't have the complications of staining, fixing, and coating inherent in electron microscopy." AFM thus has several applications in biological systems, among them analyzing the crystals of amino acids and organic monolayers. Uses of AFM in cell biology include analysis of DNA and RNA, chromosomes, cellular membranes, proteins, and lipids. "And it's very easy to use for living cells," Revenko adds. "You just take your Petri dish out of your incubator and put it under the microscope."

Cell biologists have applied the AFM's unique capabilities to study the dynamic behavior of living and fixed cells such as red and white blood cells, bacteria, platelets, and other types of cell. For example, plasma membrane in migrating epithelial cells has been imaged in real time. AFM imaging of living cells usually achieves a resolution of 10 to 50 nm. That's not sufficient for resolving membrane proteins but still suitable for detecting molecules and studying such surface features as rearrangements of plasma membrane or movement of submembrane filament bundles.

ASSISTANCE FROM ASSAYS

While microscopes of all types enable researchers to see the structures in cells, they can't generally reveal the details of cells' inner workings and interactions. To determine those cellular functions, researchers rely on biochemical assays. Well-studied areas that benefit from assays include apoptosis (programmed cell death), the cell's cytoskeleton and extracellular matrix, protein phosphorylation, signal transduction pathways, ion channels, nitric oxide, and cell stress.

Specialized companies such as **Biomol** and **Tocris Cookson** were early entrants in the cell biology and neuroscience markets. They offer several ligands to study receptor activation and inhibition. **Alexis Biochemicals**, a Swiss firm acquired by **Qbiogene** last year, has developed extensive offerings for signal transduction studies. The company, for which Axxora is the United States distributor, was an early supplier for research on nitric oxide. It consistently introduces new products for signal transduction. **Calbiochem**, **ICN Biomedicals**, and Sigma-Aldrich act as more general suppliers of biochemicals for research purposes. They offer large numbers of products for one-stop shopping in cell biology and signal transduction, as well as the more traditional biochemicals and reagents that cell biologists need.

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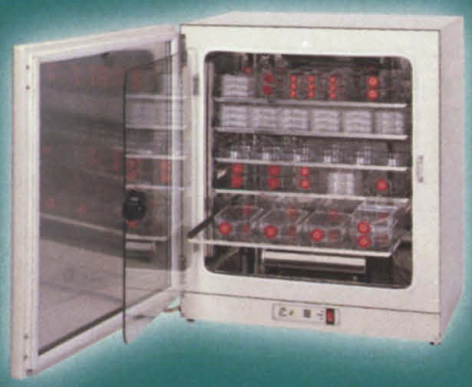

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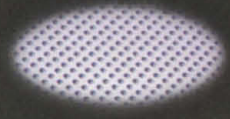

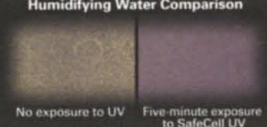

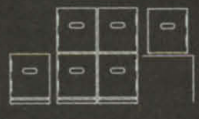

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Antibodies represent major research tools for cell biology, immunology, and signal transduction. "There are certain answers you can get with antibodies employing certain techniques such as Western blot, flow cytometry, and fluorescence microscopy that you can't get from other methods," says George of BD Biosciences Pharmingen.

Take kinases. A key development in the study of these molecules, responsible for controlling many cellular functions, was the production of specific targeted antibodies that identify the active form of protein kinases. Those tools helped researchers to gain a better understanding of kinases' roles in the various signal transduction pathways. Several companies, among them BD Biosciences, **Chemicon** and **Zymed Laboratories**, offer antibodies to study the role of kinases in signal transduction. Without these commercially available reagents, progress in cell biology would not have been as great as it has been.

"Equally important to phosphorylation by kinases is dephosphorylation by phosphatases, which is often required to remove or shut off a signal," adds George of BD Biosciences Pharmingen. "This is an area we're going after in terms of antibody development. A given protein may be phosophorylated and subsequently dephosphorylated at several given sites. Assays involving phosphorylation-specific antibodies and various kinases or phosphates inhibitors help identify the significant sites where the action occurs."

THE PROTEOMICS ERA

In the past, an individual cell biologist might have wanted to determine which gene codes for a particular protein or family of proteins. Today, progress in genomics and proteomics has brought the research community much closer to being able to relate the function of a protein to its source code – the DNA sequence that encodes this information. This takes scientists a critical step toward understanding how a cell functions at its most basic level. "We have passed the genomics era," says Novagen's Wong. "We are moving into the proteomics era."

As some protein chemists will point out, proteomics is simply the study of proteins, an activity that biochemists have undertaken for many years. However, the scope of the studies has changed dramatically. Researchers have shifted their efforts from studying single proteins to exploring families of proteins, many of which have important interactions that affect their behavior in a cell. Companies such as Novagen and Pierce Biotechnology that offer specialized products for protein studies have helped researchers make significant progress in characterizing the thousands of proteins in a cell.

In collaboration with its affiliates Calbiochem and **Merck KGaA**, Novagen focuses on the development of reagents and tools for three categories of proteomics. "Functional proteomics allows you to study protein-protein interactions using yeast, bacterial, or mammalian systems. We also classify protein-antibody biochips under the term functional proteomics," Wong says. "Structural proteomics aims to determine the three-dimensional structures of proteins. We have reagents and tools that enable scientists to clone, express, and purify proteins in high throughput fashion in order to study structural proteomics. We define display proteomics as the use of separation techniques such as 2-D electrophoresis, liquid chromatography, and microfluidics with the mass spectrometry analysis tool to compare protein expression patterns as well as post-translational patterns from normal and diseased samples by looking for proteins that are expressed, overexpressed, and underexpressed. We are striving to provide total reagent based solutions for display, functional, and structural proteomics."

BD Biosciences focuses on five areas of proteomics: protein expression, sample preparation, expression analysis, protein localization, and functional analysis. "We recently introduced a slide based antibody that is a screening tool for correlating protein expression levels with physiological or pathological processes," says Couse. "The antibody array allows the user to compare the relative abundance of hundreds of native proteins simultaneously in one experiment." Adds George: "We also offer a Western blot-based screening array that simultaneously evaluates almost 1,000 signaling proteins for changes in expression levels in control and experimental samples."

DEALING WITH THE DATA

As researchers have broadened the scope of their research projects from the study of one gene or protein to thousands of each, they have created a monster. "The size of the data is definitely a problem," says Burland of DNASTAR. The issue goes beyond the sheer volume of data generated in cell biology labs. "The difficulty is more the organization of the data," Burland continues. "Although the formats may be well understood and widely adopted, it's hard to interoperate different databases."

To deal with the problem, researchers must depend on both hardware and software vendors. "For the really big data you'll probably have to rely on the hardware providers, value added resellers, or collections of providers such as those organized by **IBM**," Burland says. "At the other end, individual researchers like to keep their data locally. They need people like us."

Accelrys, DNASTAR, **InforMax** and other bioinformatics firms play a key role in cell biology by developing software to organize the large volumes of data generated from high throughput experiments and to interpret these data with respect to cellular function. "The most important thing is being able to handle large quantities of data, in combination with being able to access the public data over the Internet," Burland says. "Having the access set up the way we do, when users find sequences of interest through searches or external queries, they can download the results directly into their applications. It's a very convenient, low-overhead way of operating."

DNASTAR aims to take the process a stage further. "We are developing a solution that you might call a personal BLAST server," Burland explains. "It permits you to easily create and add to your own database. It will be targeted at individual researchers or small teams in the same laboratory."

In addition to managing the sea of information from biochemical studies, cell biologists need to analyze the digital data produced in imaging studies that use confocal microscopes and other visualization systems that incorporate digital cameras. Companies that produce the software for these instruments will find it increasingly challenging to create user-friendly yet powerful analytical programs for these imaging applications.

Continuing advances in cell biology research hold great potential for basic scientific understanding and the treatment of disease. The tools and techniques under development by researchers and companies serving this area of science promise discoveries that will greatly impact the quality of life for all cellular creatures.

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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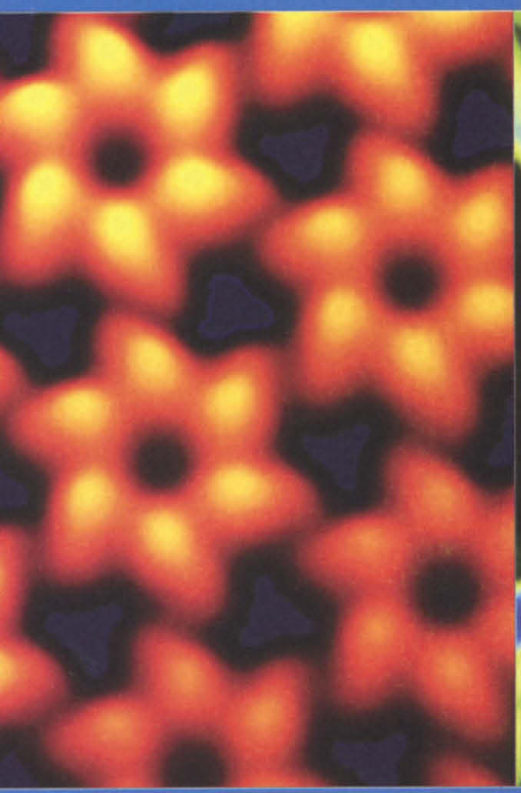
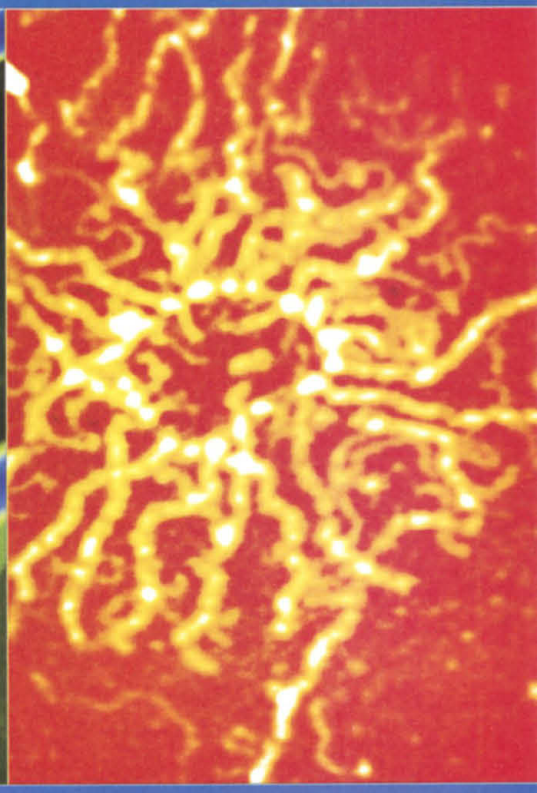
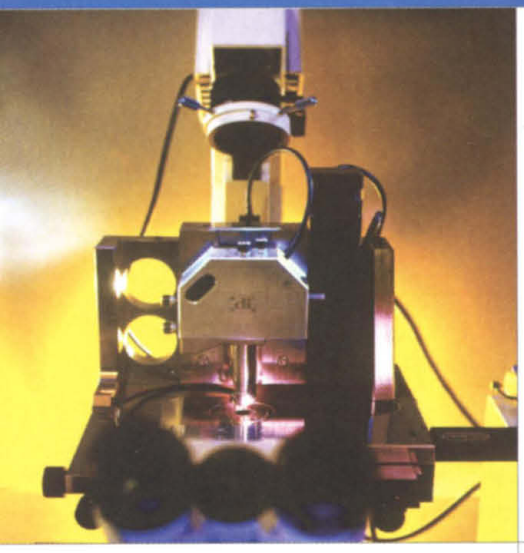


Asymetric unit membrane of urine bladder epithelium. 16nm scan courtesy M, Stolz, X.P. Kong, T.T. Sun, U. Aebi, D. Mueller, Basel Institute, Switzerland.

Lipid film on mica in fluid, 1.5μm scan courtesy of B. Ohler and C. Husted, University of California, Santa Barbara.



Microciona prolifera: circular proteogylcan, 100nm scan courtesy Xavier Fernandez-Busquets, PhD, Research Center for Bioelectronics and Nanobioscience, University of Barcelona.



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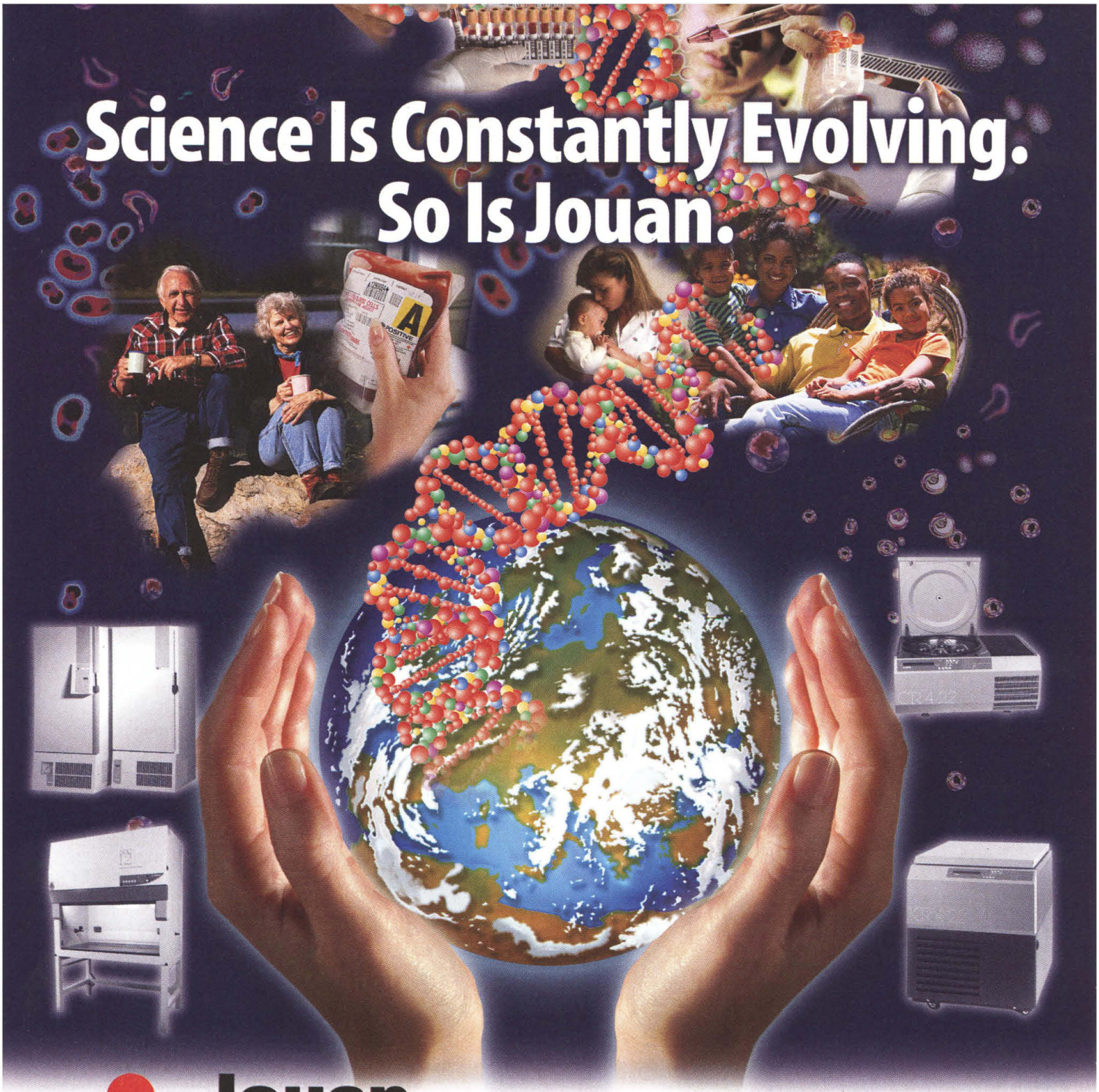

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cell culture plasticware
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Miltenyi Biotech
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Molecular Probes, Inc.
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Nalge Nunc International
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R&D Systems, Inc.
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SANYO Sales & Marketing Corporation / SANYO Electric Biomedical Co., Ltd.
constant temperature equipment
www.sanyo-biomedical.co.jp

Sigma-Aldrich Corporation
biochemicals and reagents
www.sigma-aldrich.com

Thermo Electron Corporation (Thermo Forma)
constant temperature equipment, sterility control
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POSITIONS OPEN

TENURE-TRACK FACULTY POSITION
Experimental Condensed Matter Physics
University of California, Riverside

The Department of Physics at the University of California, Riverside, invites highly qualified applicants to apply for a new faculty position in experimental condensed matter physics. This is a tenure-track position to be filled at the **ASSISTANT PROFESSOR** level. UC Riverside is undergoing unprecedented growth. The Department is seeking outstanding candidates with the potential for exceptional research and excellence in teaching. The successful candidate is expected to establish an outstanding, well-funded research program involving graduate students and Postdoctoral Scientists and to contribute to department teaching at all levels. The Department has very active condensed matter research programs in strongly correlated electron systems, surface physics, optical/laster physics, and spintronics, The successful applicant is expected to actively participate in the new campus Center for Nanoscale Science and Engineering that emphasizes the areas of nanoelectronics, nanophotonics, nanomachines, and nanobiotechnology.

Candidates for this position are required to have a Ph.D. or equivalent degree in physics. Salary will be competitive and commensurate with qualifications and level of appointment. We anticipate that the appointment will be effective July 1, 2003. Candidates should submit a letter of application, curriculum vitae, evidence of teaching skills, and evidence of an outstanding research program. They should also arrange to have three letters of reference sent to the Department and be willing to submit additional references on request. Letters should be sent to:

Chair, Search Committee
Experimental Condensed Matter Physics
Department of Physics
University of California
Riverside, CA 92521

Full review of applications will begin January 20, 2003. Applications received after this date will be considered on a case-by-case basis until the position is filled. *The University of California is an Equal Opportunity/ Affirmative Action Employer.*

ASSISTANT PROFESSOR
Department of Physiology and Functional Genomics
University of Florida College of Medicine

The Department of Physiology and Functional Genomics invites applications from outstanding individuals for a tenure-track faculty position at the level of **ASSISTANT PROFESSOR**. Candidates must have a Ph.D. and/or M.D. degree, a good record of publications, and postdoctoral research experience in cellular/molecular physiology. The successful candidate will be expected to develop a strong, extramurally supported, independent research program. Candidates in all areas of physiology will be considered. Areas of special interest include cardiovascular, endocrine, cell signaling, functional genomics, gene therapy, and development biology. Candidates will be expected to teach in medical, dental, and graduate school courses and mentor graduate students. The College of Medicine has interdisciplinary centers in mammalian genetics, hypertension, and cancer and gene therapy as well as the McKnight Brain Institute. Salary is commensurate with qualifications and experience. An excellent start-up package includes initial support from the Howard Hughes Medical Institute Research Resources Program for Medical Schools grant to the College of Medicine. Along with a cover letter, please submit curriculum vitae, a statement of research plans, and the names of at least three references to: **Peter P. Sayeski, Ph.D., Chair, Faculty Search Committee, Department of Physiology and Functional Genomics, P.O. Box 100274, University of Florida College of Medicine, Gainesville, FL 32610-0274.** Application deadline: December 31, 2002. Anticipated start date: July 1, 2003. *The University of Florida is an Equal Employment Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

TWO TENURE-TRACK POSITIONS
Plant and Microbial Cell/Molecular Biology

The Department of Biology and the Program in Biochemistry and Molecular Biology at Dickinson College seek applicants for two tenure-track positions with cell/molecular expertise, one position in plant biology/biochemistry and the other in microbial molecular biology. A Ph.D. is required; postdoctoral experience preferred. The plant biology position will involve teaching an upper-level plant biology course and courses in biochemistry and a specialty. The microbial biology position will involve teaching courses in microbiology/virology and genetics and developing a specialty course. Both positions contribute to teaching introductory courses and helping to develop a growing bionformatics program. Successful candidates will have access to start-up and institutional research funds and will be expected to develop a vigorous research program involving undergraduates. Review of applicants will begin on January 1, 2003. Send curriculum vitae, statement of teaching and research interests, and contact information (including e-mail addresses) for three references to: **Dr. Michael Roberts, Department of Biology, Dickinson College, Carlisle, PA 17013.** Dickinson is a highly selective, national liberal arts college with an emphasis on innovative science teaching and student/faculty research. *Dickinson College is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

TENURE-TRACK FACULTY POSITION
Genomics/Complex Genetic Disorders
University of Pennsylvania

The University of Pennsylvania is extending its search for a tenure-track faculty position in medical and comparative genetics to include applicants at any academic rank. The appointment will be in the School of Veterinary Medicine as a member of the Center for Comparative Medical Genetics. We are seeking candidates interested in investigating the genetic basis of naturally occurring animal models of human genetic disease, in particular the use of large-scale genome mapping and analysis, functional genomics, or other new methods and/or the investigation of diseases with complex inheritance patterns. Candidates should have a Ph.D. and/or D.V.M. or equivalent degree and advanced scientific training in a relevant area. The application deadline is extended to January 15, 2003. Submit curriculum vitae, summary of current research activities, plans for future research, and list of three references to: **Comparative Medical Genetics Search Committee, School of Veterinary Medicine, University of Pennsylvania, 3900 Delancey Street, Philadelphia, PA 19104** or submit as attachments by **e-mail: ccmg@vet.penn.edu**. *Penn is an Equal Opportunity/Affirmative Action Employer.*

DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS
Case Western Reserve University

The Department of Physiology and Biophysics invites applications for **TENURE-TRACK FACULTY** at the junior level or more senior faculty in the general area of protein structure and function. We particularly seek candidates with expertise in proteomics, mass spectrometry, macromolecular structure, or biophysical chemistry of proteins, although cutting-edge research rather than topic area is of greatest importance. The Department has very strong research programs in molecular biophysics and physiology and is well funded. We offer a very interactive environment, a positive and supportive research culture, and a highly competitive start-up package. Please submit curriculum vitae; a statement of future research directions; three representative reprints; and the names, addresses, and telephone numbers of four references to: **Dr. F.D. Sönnichsen, Physiology and Biophysics, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106-4970.** Visit our **website: http://biophysics.cwru.edu.** *Case Western Reserve University is an Equal Opportunity/Affirmative Action Employer. Applications from women and members of underrepresented minorities are encouraged.*

Be a part of it.

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

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

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

The Donald W. Reynolds Center for Genetic Research.

In 2002, OMRF dedicated the new Donald W. Reynolds Center for Genetic Research, a $15 million state-of-the-art barrier facility for the production and storage of genetically-altered mice. This facility includes quarantine rooms, clean rooms, animal receiving and transfer rooms, staging areas, operating rooms, necropsy, surgery, and recovery/ICU rooms. The Reynolds Center also houses OMRF's Microinjection facility. The Reynolds Center is one of the top facilities of its kind in the country and will serve as a major resource for scientists at OMRF and across the region.

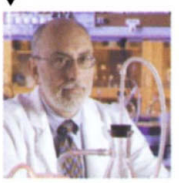
It's only the beginning.

The Oklahoma Medical Research Foundation is accepting applicants for both graduate and post-graduate doctoral fellowship training programs, as well as independent investigators/members. (Graduate Degrees are granted through the University of Oklahoma Health Sciences Center.) Be a part of it. Find out more by visiting **www.omrf.org,** or call **1-800-522-0211** today.

John Harley, M.D., Ph.D.
Arthritis and Immunology

Charles Esmon, Ph.D.
Cardiovascular Biology

J. Donald Capra, M.D.
Molecular Immunogenetics



Paul Kincade, Ph.D.
Immunobiology and Cancer

Program Head, Developmental Biology

The Oklahoma Medical Research Foundation (OMRF) is recruiting a head for its Developmental Biology Research Program. OMRF is committed to expanding its Developmental Biology program from one to four (with the possibility of additional) member scientists over the next three years. OMRF has made major investments in the program, including extensive laboratory renovations and additions, commitments to new salary lines, and the addition of state-of-the-art core facilities. The major research focus of the Developmental Biology program will be developed by the new program head. However, a key component of the program is the molecular engineering of the mouse genome to generate useful models of human disease. The program has established a Microinjection Core Facility, the only one in the state of Oklahoma. In addition, the Developmental Biology program will have as a resource the Donald W. Reynolds Center for Genetic Research, a new $15 million barrier facility for the production of transgenic and knockout mice. Applicants should submit a curriculum vitae and a letter of application explaining interest in the position and include qualifications, previous professional responsibilities and achievements, leadership and administrative philosophy. **CV and letter should be directed to J. Donald Capra, M.D., President, The Oklahoma Medical Research Foundation, 825 Northeast 13th Street, Oklahoma City, OK, 73104. E-mail inquires and applications can be sent to JDonald-Capra@omrf.ouhsc.edu.**

FOR MORE INFORMATION AND JOB OPENINGS, VISIT www.omrf.org

The Oklahoma Medical Research Foundation
825 NE 13th Street • Oklahoma City, OK 73104-5046 • 1-800-522-0211 • www.omrf.org

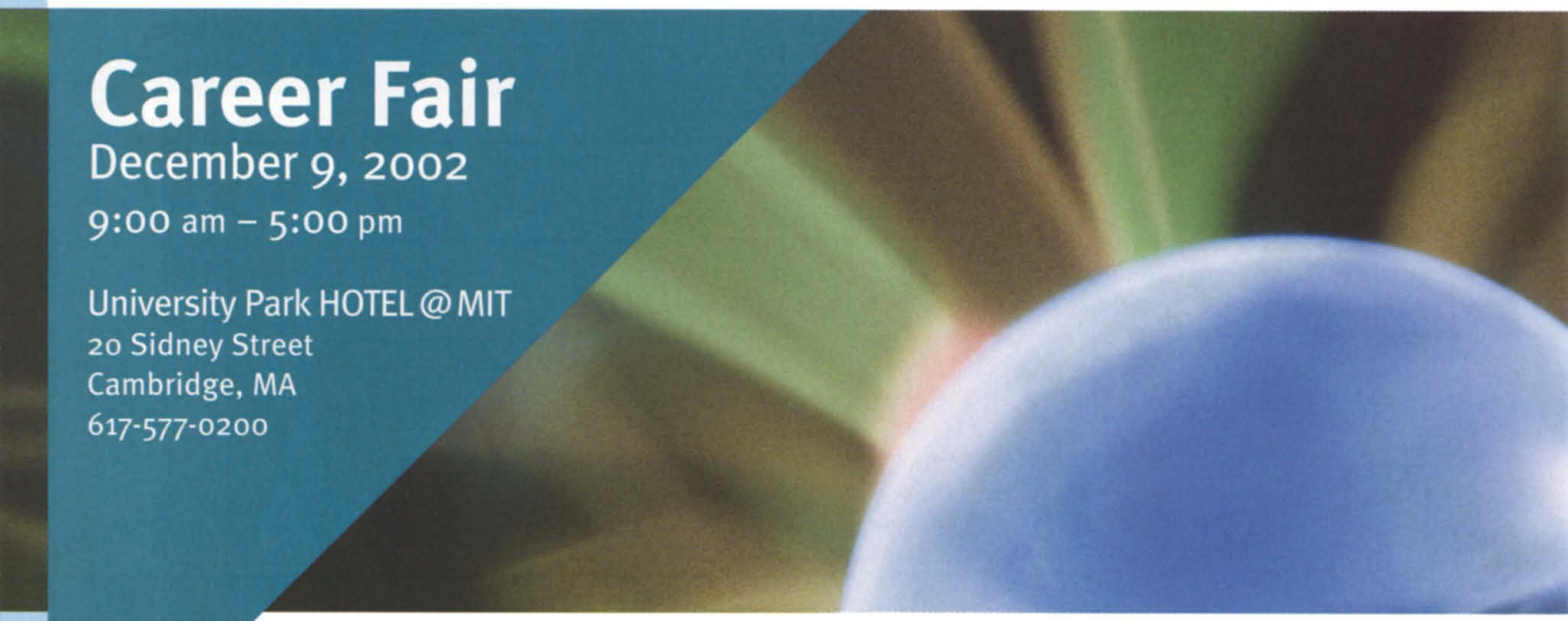
EOE/AA Employer

Career Fair

December 9, 2002

9:00 am – 5:00 pm

University Park HOTEL @ MIT
20 Sidney Street
Cambridge, MA
617-577-0200



You are a catalyst.

Faculty Positions
Department of Pharmacology
The University of Michigan

The Department of Pharmacology is seeking applications for three tenure-track positions at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. We are seeking outstanding individuals with research experience and interests that augment current department initiatives in *Cardiovascular Pharmacology, Cancer Pharmacology,* and *Pharmacogenetics.* Qualifications include a Ph.D. in Pharmacology and/or M.D. degree, 3-5 years of postdoctoral experience, and research accomplishments as evidenced by scholarly contributions to the literature.

For the Cardiovascular Pharmacology position, consideration will be given to applicants having documented experience with *in vivo* and *in vitro* experimental models in therapeutic areas of cardiac electrophysiology, thrombosis, myocardial ischemia, inflammation and heart failure as well as an ability to employ molecular, biochemical and functional assays to elucidate drug mechanisms and potential therapeutic applications. For the Cancer Pharmacology position, applicants with interests in signaling events in response to DNA damage and other cellular stresses or regulation of the cell cycle as it relates to response to chemotherapeutic agents are encouraged. For the Pharmacogenetics position, consideration will be given to applicants with experience in the identification and characterization of polymorphic genes encoding xenobiotic metabolizing enzymes/transporters or involved in their regulation in animals or man. Applicants with outstanding backgrounds in Phase I/Phase II drug metabolism are also encouraged.

Successful candidates will be expected to establish an externally funded research program and to participate in teaching medical students and other health professionals, as well as graduate and postdoctoral students. An attractive startup package including excellent laboratory facilities and generous startup funds will be available.

Information about current faculty interests is available at **http://sitemaker.umich.edu/pharmacology/pharmacology.people/faculty**.

Applicants should send their curriculum vitae, a two- to four-page summary of their research program and future research plans, and information related to past and current teaching experience. Three letters of recommendation should also be sent. Address all correspondence to: **Dr. Paul F. Hollenberg, Chair, Pharmacology Search Committee, Department of Pharmacology, The University of Michigan Medical School, 1150 West Medical Center Dr., Ann Arbor, MI 48109-0632.**

The University of Michigan is an Affirmative Action/Equal Opportunity Employer. Applications from qualified women, minorities and/or disabled individuals are encouraged.

CORNELL UNIVERSITY
Weill Medical College

Department of Pharmacology

The Weill Medical College of Cornell University invites applicants for the position of Assistant Professor in the Department of Pharmacology.

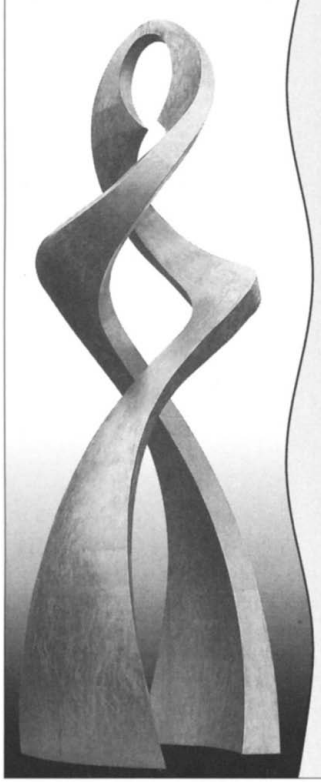
The Weill Medical College is located in Manhattan's Upper East Side, adjacent to the Memorial Sloan-Kettering Cancer Center and the Rockefeller University, and is affiliated with the New York Presbyterian Hospital. This rich scientific environment provides many unique and unparalleled research opportunities.

The primary qualification for the position is a record of research excellence and a high potential for imaginative research in any area of modern biology. The applicant's research program may involve, but is not limited to, chemical biology, molecular biology, cell biology, cancer biology, molecular neuroscience, mechanistic approaches toward genomics or proteomics, structural biology, or computational biology.

Applicants should send a curriculum vitae, a statement of research interests and future research plans, and arrange to have three letters of reference sent to: **Chair, Pharmacology Search Committee, Department of Pharmacology, 1300 York Avenue, Box 70, New York, NY 10021; Fax: 212.746.8858.**

Equal Opportunity/Affirmative Action
Minorities/Females/Disabled/Veterans

STOWERS INSTITUTE
FOR MEDICAL RESEARCH



Stowers Institute Postdoctoral Program

The Stowers Institute seeks more effective means of preserving health and preventing disease through basic research on genes and proteins that control fundamental processes of cellular life. The Institute offers fellowships for postdoctoral research training in state-of-the-art laboratories headed by outstanding scientists who work at the bench alongside their team members. Among the mentors are:

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Joan Conaway, Ph.D.
Mechanism and regulation of transcription by RNA polymerase II
Ron Conaway, Ph.D.
Molecular mechanism and regulation of gene transcription
Chunying Du, Ph.D.
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Jennifer Gerton, Ph.D.
Mechanisms ensuring fidelity of chromosome distribution
Scott Hawley, Ph.D.
Control of meiotic chromosome behavior in Drosophila
Linheng Li, Ph.D.
Regulatory networks in hematopoietic stem cell development
Olivier Pourquié, Ph.D.
Regulation and timing of vertebrate segmentation
Paul Trainor, Ph.D.
Tissue interactions regulating cranial and facial development
Ting Xie, Ph.D.
Molecular regulation of germline stem cells in Drosophila and mouse
Paul Kulesa, Ph.D.
Cellular behavior during morphogenesis; imaging of embryogenesis
Arcady Mushegian, Ph.D.
Computational analysis of genes and proteins
Brian Sauer, Ph.D.
Biochemical genetics of the Cre/lox system; gene targeting in mice

More information may be found at:

www.stowers-institute.org

The Stowers Institute is committed to equal opportunity in all its programs.

Supervisory Research Plant Pathologist/ Research Geneticist (Plants)

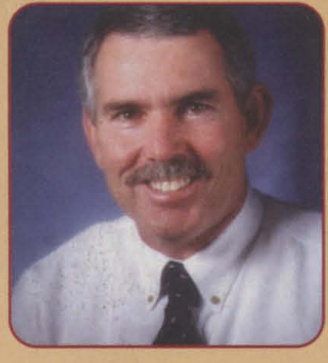
The USDA, Agricultural Research Service, National Clonal Germplasm Repository for Citrus and Dates located on the campus of the University of California at Riverside, CA, invites applications for the position of Research Leader, GS-13/14/15 ($68,944 to $124,588 per annum, salary commensurate with experience). Serves as manager for the Repository whose mission is to collect, maintain, evaluate and distribute germplasm of citrus, related genera, and date palms and to perform related research. Conducts independent research for either plant pathogen detection, elimination, tolerance, resistance/susceptibility, epidemiology, disease characterization or utilizing population genetics related to germplasm for evaluation, selection, collection and maintenance. Research objectives are to develop new, improved techniques to detect and identify the causal agents associated with these diseases, and create approaches that may induce resistance to these pathogens (e.g., induced systemic acquired resistance, gene silencing). A Ph.D. or equivalent in Plant Pathology or Plant Genetics (Molecular Biology) or a closely related field is desired. This is a competitive, permanent appointment and U.S. Citizenship is required. For information on the position contact **Dr. Michael Shannon, (510) 559-6071** or email: **mshannon@pw.ars.usda.gov**. Information about application procedures may be obtained via ARS website: **http://www.afm.ars.usda.gov/divisions/hrd/vacancy/resjobs/X3W-3019.HTM** while information about the Riverside Location is available at **http://pwa.ars.usda.gov/riverside/index.shtml**. Applications must be postmarked by **December 31, 2002**.

USDA-ARS is an Equal Opportunity Provider and Employer.

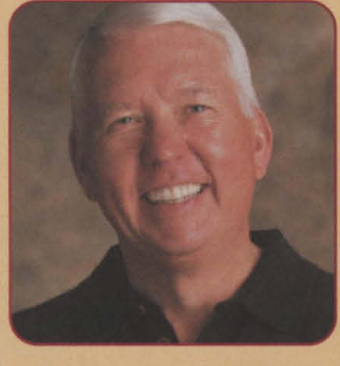
An Announcement and an Invitation from

Arizona Biodesign Institute

Dr. Michael Crow



Dr. Jeffrey Trent



Dr. Charles Arntzen

Biodesign: The creative linkage of fundamental science and technology-based solutions to confront specific human health challenges.

Arizona State University President Michael Crow announces the launching of the Arizona Biodesign Institute (AzBio) and an invitation to nominate candidates for its first permanent director. This flagship initiative will be a signature activity of the University, and a catalyst for economic growth in the Phoenix area. Through genomics, biologics, informatics, and nano-biologic systems, the Institute will explore scientific problems and design biological and therapeutic applications to meet a variety of human needs. The new director succeeds Charles Arntzen, the ongoing director of a key center within AzBio, and the founding director of the Institute.

The Institute combines:

- Eight existing University centers and a cooperating relationship with TGen, the Phoenix-area genomics research program recently established by Jeffrey Trent. The total of these annual operating budgets is expected to reach $35 million within three years.
- New resources available to the director drawn from a $400 million stream of state research and economic development funding for ASU spread over 20 years.
- A $70 million, 170,000 square foot building, opening in the fall of 2004, with a second, similar structure in design and two more in planning.
- Collaborative support from numerous regional research laboratories, corporations, medical facilities, academic institutions, and civic organizations.

The new director, an established scientist, experienced entrepreneur, and nationally recognized research leader will bring together a high quality group of programs to create a research environment that makes AzBio a globally leading biodesign center.

- Making it the preferred place for talented biodesign scientists to do their work;
- Bringing visionary leadership to a complex, growing scientific enterprise;
- Establishing productive relationships with those engaged in biodesign work at ASU, in greater Phoenix, across the country, and worldwide;
- Building a business model that expands into a Phoenix biotechnology research cluster and makes the Institute increasingly self-sufficient.

Nominations are being received by Jerry Pieh at Isaacson, Miller, a national executive search firm: 334 Boylston Street, Suite 500, Boston, MA 02116. jpieh@imsearch.com.

Arizona State University, Tempe, AZ, enrolls some 55,000 full and part-time students on four metropolitan Phoenix campuses. Its research, teaching, and community-oriented programs are central to the emergence of the fastest growing city in the country. AzBio is a leading element in Michael Crow and ASU's vision for a new model of American higher education.

ASU AzBio

Arizona Biodesign Institute

Arizona State University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NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH

Career Fair

December 9, 2002

9:00 am – 5:00 pm

University Park HOTEL @ MIT

20 Sidney Street, Cambridge, MA 617-577-0200

Speakers include:
Kate Walsh, *Chief Operating Officer*
Dalia Cohen, *Head, Functional Genomics*
Tom Hughes, *Head, Diabetes Research*
Manuel Peitsch, *Head, Information and Knowledge Management*

The opening of our new world research headquarters in Cambridge is just the start of our efforts to globally redefine drug discovery. Come see how you can be part of our vision for the post-genomic era.

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The University of Illinois at Urbana-Champaign
School of Molecular and Cellular Biology

Open-rank Faculty Position in the Department of Microbiology

The School of Molecular and Cellular Biology at the University of Illinois at Urbana-Champaign invites applications for a full-time tenure track faculty position in Microbiology. Applications at all faculty ranks will be considered. Appointment at the Assistant Professor level requires a doctoral degree, postdoctoral experience, and evidence of outstanding research potential. Appointees at this level will be expected to develop a vigorous, independently funded research program. Highly qualified scientists at the Associate and Full Professor levels are encouraged to apply. The starting date of this position is August 2003. Appointment at higher levels requires evidence of outstanding research accomplishments, including extramural funding and national recognition. Applicants at all levels will be expected to contribute effectively to undergraduate/graduate teaching.

The Department of Microbiology has long-standing expertise in microbial physiology, genetics, evolution, and pathogenesis. The successful candidate will be provided with excellent laboratory facilities, substantial start-up funds, and a salary commensurate with experience. The University of Illinois at Urbana-Champaign provides a highly interactive, interdisciplinary research environment and state-of-the-art research support facilities. Urbana-Champaign offers the residential advantages of a medium-sized university city, excellent cultural opportunities, and easy access to Chicago and St. Louis. Information concerning the Department of Microbiology and the School of Molecular and Cellular Biology can be found at: **http://www.life.uiuc.edu/micro**.

Applications should be submitted to: **School of Molecular and Cellular Biology, University of Illinois at Urbana-Champaign, 393 Morrill Hall, 505 S. Goodwin Ave., Urbana, IL 61801**. An application must include a curriculum vitae, with a complete list of publications and a concise summary of past research accomplishments and future plans. Please arrange to have four letters of recommendation sent to the same address.

Electronic submissions as pdf files are encouraged and should be sent to **mcbsearch@life.uiuc.edu**. To ensure full consideration, applications should be received by January 15, 2003. Interviews may be conducted before the closing date but no hire will be made until after the search is closed.

The University of Illinois at Urbana-Champaign is an Affirmative Action, Equal Opportunity Employer.

UK

UNIVERSITY OF KENTUCKY
TENURE-TRACK POSITIONS IN
SPINAL CORD AND BRAIN INJURY RESEARCH

The Spinal Cord and Brain Injury Research Center at the University of Kentucky College of Medicine invites applications for tenure-track positions at the advanced or beginning levels. Endowed chairs may be available at advanced rank. Applicants should have a Ph.D. and/or M.D. and postdoctoral research experience in neuroscience or a related discipline. Areas of particular interest include axon guidance, CNS neural plasticity and regeneration, neural precursor cells and transplantation, neuroimmunology, neural tissue engineering, glial cell biology and neuroprotection. Applicants with behavioral assessment, electrophysiological, cellular and molecular expertise are particularly encouraged. Successful applicants will be expected to join a growing interdisciplinary team interested in spinal cord and head injury research, and will have an appointment in a basic science or clinical department in the College of Medicine. Applications should include a curriculum vitae, statement of research interests and future directions, and the names and addresses of at least three references.

Applications should be sent to: **Edward D. Hall, Ph.D. Director, Spinal Cord and Brain Injury Research Center (SCoBIRC), University of Kentucky, Chandler Medical Center, 232 Health Sciences Research Building, Lexington, KY 40536-0305, Telephone: (859) 323-4678, FAX: (859) 257-5737, E mail: edhall@uky.edu**.

Women and minority candidates are encouraged to apply.
The University of Kentucky is an Affirmative Action/
Equal Opportunity Employer.

EXTENDING & ENHANCING HUMAN LIFE.

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.

RESEARCH INVESTIGATOR

Wallingford, CT

Bristol-Myers Squibb Pharmaceutical Research Institute invites applications for a Research Investigator in our Oncology Chemistry Department. Applicants must have a Ph.D. in Organic Chemistry with a minimum of 3-4 years' additional training in total synthesis of natural products and heterocyclic compounds. The candidate should have accrued 3 to 4 years' experience in the pharmaceutical industry in a drug discovery, medicinal chemistry position, as well as a significant bibliography to show they are capable of making scientific breakthroughs in the development of novel pharmaceutical treatments. Candidates should have extensive experience in the synthesis and manipulation of oxiranes, ketoamides, azaindoles (particularly fluorinated azaindoles), as well as experience in the chemistry and biology of the antimicrotubule agents paclitaxel and epothilone. Experience in the semi-synthesis of epothilone derivatives and the design and synthesis of HIV entry inhibitors is necessary.

If you would like to join our highly collaborative team, please submit curriculum vitae, indicating Source Code: **TGSM02**, a brief description of research accomplishments, and names and telephone numbers of three references to: **Bristol-Myers Squibb, Pharmaceutical Research Institute, 5 Research Parkway, Wallingford, CT 06492; Fax: (203) 677-7762; or Email to: recruit.pri@bms.com.**

Bristol-Myers Squibb is proud to be an equal opportunity employer, M/F/D/V.

Bristol-Myers Squibb Company
Pharmaceutical Research Institute

www.bms.com

Karolinska Institutet

invites applications for the strategic position of

Professor in Cell Biology

Applicants are expected to be active scientists with a special interest in cell cycle regulation and/or apoptosis. We are especially interested in individuals who have made advances of conceptual importance in either of these research areas. The successful applicant is expected to develop a vigorous research program and take active part in supervising postgraduate and postdoctoral students.

Karolinska Institutet offers a stimulating scientific environment with a number of strong research groups working in cancer biology, signal transduction, developmental biology and oncology. Karolinska Institutet also has an attractive technical infrastructure with for example core facilities for DNA and protein analysis, bioinformatics, production/analysis of genetically modified mice and gene transfer and therapy.

The professorship is strategic in nature and Karolinska Institutet offers a guaranteed support for 5 years. It can be placed at any department within Karolinska Institutet and a competitive start-up package can be further negotiated by the successful applicant. The area of focus for this professorship is of central importance to many areas of research within Karolinska Institutet and applicants will be able to find a selection of creative environments suitable to their particular focus of interest.

See Karolinska Institutet's homepage at **http://info.ki.se/news/job_opportunities** for complete announcement and information on how to apply for the position.

Karolinska Institutet is one of the largest centres for Biomedical research and education in Northern Europe. With nearly 6000 students, 2000 PhD-students and about 3500 employees, Karolinska Institutet is responsible for 40% of all academic medical research and about 30% of the medical training in Sweden. Awarding the Nobel Prize in Physiology or Medicine has given Karolinska Institutet an invaluable contact network throughout the global scientific community. For more information see **http://info.ki.se/news/items/AR-2001**

KAROLINSKA INSTITUTET
a medical university

The University of Illinois at Urbana-Champaign
The Department of Molecular and Integrative Physiology
School of Molecular and Cellular Biology
Faculty Position in Systems Physiology

The Department of Molecular and Integrative Physiology and the School of Molecular and Cellular Biology at the University of Illinois at Urbana-Champaign invite applications for a faculty position in Systems Physiology. The successful candidate will address fundamental mechanisms involved in the functioning of organs and tissues using molecular, genetic or computational approaches. Although the Department has a particular interest in identifying outstanding candidates working in cardiovascular, respiratory or renal physiology, the excellence of the candidate is more important than the area of research. Because of recent success in filling positions in Neuroscience, applications in this area are not encouraged.

The position is full-time and tenure track in the Department of Molecular & Integrative Physiology in the College of Liberal Arts and Sciences and/or in the College of Medicine. Although we anticipate the appointment will be made at the Assistant Professor level, applications for positions at the Associate and Full Professor levels will also be considered; highly qualified scientists at these levels are encouraged to apply. The starting date for this position is August 2003. Appointment at the Assistant Professor level requires a doctoral degree, postdoctoral experience, and evidence of outstanding research potential. Appointees at this level will be expected to develop a vigorous, independently funded research program. Appointment at higher levels requires evidence of outstanding research accomplishments including extramural funding and national recognition. Applicants at all levels will be expected to contribute effectively to undergraduate/graduate teaching.

The University of Illinois at Urbana-Champaign has added substantial faculty strength in the biological sciences over the last four years and additional hires in related areas are anticipated each year for the next several years. Successful candidates will be provided with excellent laboratory facilities, substantial start-up funds, and a salary commensurate with experience. The University of Illinois at Urbana-Champaign offers a highly interactive, interdisciplinary research environment and state-of-the-art research support facilities. Urbana-Champaign offers the residential advantages of a medium-sized university city, excellent cultural opportunities and easy access to Chicago and St. Louis. Information concerning the School of Molecular and Cellular Biology at the University of Illinois can be found at **http://www.life.uiuc.edu/mcb/**.

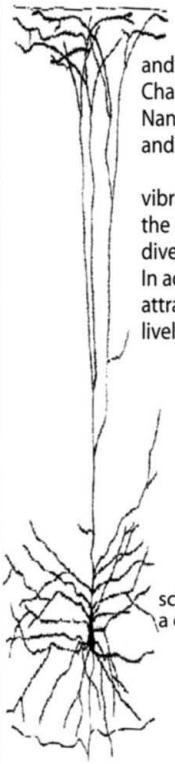
Applications should be submitted to: **Systems Physiology Search, School of Molecular & Cellular Biology, University of Illinois at Urbana-Champaign, 393 Morrill Hall, 505 S. Goodwin Ave., Urbana, IL 61801**. An application must include a curriculum vitae, with a complete list of publications and a concise summary of past research accomplishments and future plans. In addition, four letters of recommendation should be sent to the same address.

Electronic submissions, such as pdf files, are encouraged and should be sent to **mcbsearch@life.uiuc.edu**. If submitting electronically, please indicate that the application is for the systems physiology position. To ensure full consideration, applications should be received by January 20, 2003. Interviews may be conducted before the closing date but no hires will be made until after the search is closed.

The University of Illinois at Urbana-Champaign is an Affirmative Action, Equal Opportunity Employer.

The Montreal Neurological Institute of McGill University

Faculty Positions in Neuroscience



The Montreal Neurological Institute (MNI) at McGill University is initiating a major recruiting effort supported by private donations and new government initiatives in research funding. These include the Canadian Institutes for Health Research, the Canada Research Chairs, the Canada Foundation for Innovation, Fonds de la Recherche en Santé du Québec, Genome Canada, Genome Québec and NanoQuébec. In the past two years the MNI has received more than $35M in government funds to build and equip new laboratories, and in the past seven years 18 new faculty members have been recruited to the Institute.

We are seeking applications for tenure track faculty positions at all levels and in all disciplines of neuroscience. The MNI has a vibrant research environment and is an integral part of McGill University located in downtown Montreal. Faculty research interests span the breadth of neuroscience. Moreover, the neuroscience community at McGill and in greater Montreal is one of the largest and most diverse in North America. The MNI has about 45 independent investigators, more than 120 graduate students and over 50 postdocs. In addition, the MNI is adjacent to new research buildings dedicated to genomics, proteomics and bioinformatics. We offer highly attractive salary and start-up packages and an exceedingly high quality of life in Montreal, one of North America's greatest and most lively cities.

Basic science and disease related programs include:

Anatomy and physiology of neuronal systems and networks
Development
Genetics - molecular and population
Learning, memory and language
Neuronal cell biology
Neuronal signaling
Brain tumours
Epilepsy
Movement disorders
Multiple Sclerosis
Neuromuscular diseases
Brain and neural imaging - including anatomical, functional and spectroscopic MRI (human and animal), PET imaging (human and animal), along with confocal and electron microscopy

Applicants should have an MD, a PhD or the equivalent and at least three years of postdoctoral research training. Clinician scientists with combined degrees are encouraged to apply. Please send a letter outlining your current and future research interests, a copy of your curriculum vitae and the names and addresses of three references to:

Dr. David Colman
Director
Montreal Neurological Institute
McGill University
3801 University St.
Montreal, Quebec H3A 2B4
CANADA

Send email inquiries and applications to:
facultysearch.mni@mcgill.ca

Application deadline: February 1, 2003

More information at www.mni.mcgill.ca.

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

University of Idaho

DEAN, COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
UNIVERSITY OF IDAHO

The University of Idaho (UI) is a comprehensive, doctoral/research-intensive, land-grant institution founded in 1889. Through its nine colleges, the University offers a wide range of undergraduate programs. There are 9,000 undergraduate students and 4,200 graduate and professional students. The student/faculty ratio is 17:1. The campus is a panorama of lawns, mature trees, flowerbeds, and stately brick buildings. Approximately 70 educational and residential buildings are located on the 1,420 acres of land. For further information, please visit the UI website at **www.uidaho.edu**.

The College of Agricultural and Life Sciences (CALS), established in 1901, is the first College of the University and continues to serve as the cornerstone of its land-grant mission. Currently, the College has more than 1,000 students, including 200 graduate students, 550 staff and faculty, and a resources budget of $60 million annually. The College consists of seven academic and research departments, the School of Family and Consumer Sciences, four district offices, twelve research and extension centers, and 42 county extension offices. The academic units are Agricultural Economics and Rural Sociology; Agricultural and Extension Education; Animal and Veterinary Science; Biological and Agricultural Engineering; Family and Consumer Sciences; Food Science and Toxicology; Microbiology, Molecular Biology and Biochemistry; and Plant, Soil and Entomological Sciences.

The University of Idaho is seeking an outstanding individual to lead the College of Agricultural and Life Sciences into the 21st Century. The Dean is the chief academic and executive officer of the College who is responsible for the planning, program development, personnel, team building, budget development, attraction of external funds, and overall academic excellence of CALS. Working with the faculty, the Dean is responsible for policy development, implementation and evaluation. Successful candidates will have professional accomplishments to qualify for a tenured full professorship in one of the College's disciplines. Candidates will have proven leadership and administrative experience demonstrated by success in significant leadership roles at a research/teaching university or in an equivalent executive position. A terminal degree in one of the disciplines of the College is required. Salary DOE. For a full position description, see **www.morrisberger.com**. Send resume and cover letter to: **Morris & Berger, 201 S. Lake Ave., Ste. 700, Pasadena, CA 91101. Fax or E-mail: (626) 795-6330, mb@morrisberger.com.**

EOE

Tenure-Track Faculty

The Ohio State University Department of Biomedical Informatics is recruiting faculty with research interests in bioinformatics, image analysis, computational biology, visualization, medical information systems, data mining and data intensive and grid computing. OSU has an established supercomputing facility and nationally recognized programs in genomics, nanotechnology, MRI imaging, bioengineering, and other state of the art research areas committed to supporting and expanding this burgeoning field and offers a highly competitive compensation package. The successful applicant is expected to play an active role in the educational objectives of our program, compete effectively for external funding and to lead interdisciplinary research programs. Senior applicants must have demonstrated success in obtaining external research support for independent research projects and evidence of excellence in academic teaching and a successful track record of publication. Applicants must have an M.D. and/or Ph.D. degree.

Applicants should send a complete curriculum vitae, statements of research and teaching, copies of 2-3 relevant publications and 5 references to:

Lynne Aldrich, Department Manager
OSU Department of Biomedical Informatics
3184 Graves Hall
333 West 10th Ave.
Columbus, Ohio 43210
E-mail: Aldrich.23@osu.edu
phone: 614-292-4778
fax: 614-292-7659

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FLORIDA ATLANTIC UNIVERSITY
SCHMIDT SENIOR FACULTY FELLOW/PROFESSOR
DEPARTMENT OF BIOMEDICAL SCIENCE

Florida Atlantic University is pleased to request nominations and applications for the position Schmidt Senior Faculty Fellow in Biomedical Science. The Schmidt Fellows will provide the core senior faculty in the Department of Biomedical Science. We are seeking a senior level scientist at the full professor level with an excellent record of research and extramural funding. The current areas of research strength in the Charles E. Schmidt College of Science include neuroscience, cardiovascular development and function, molecular and cellular biology of cancer, hormonal regulation of gene expression, developmental biology, extracellular matrix, bioactive peptides, therapeutic potential of natural products and epidemiology. The research program of the Schmidt Fellow can complement these areas but may also represent a new area of research within biomedical science. Teaching expertise must be in one of the following areas: genetics, physiology, pharmacology, pathology, epidemiology, histology or microbiology. The position comes with excellent start-up funds and salary.

The Department of Biomedical Science is housed in a new, 93,000 sq. ft. facility, the Schmidt Biomedical Science Center. Funding for this building, and an endowment to ensure ongoing support for research and teaching of distinction, was from an extraordinary gift of $15 million from the Schmidt Family Foundation and matched from the State of Florida. The academic responsibilities of the Schmidt Senior Faculty Fellow will be to provide scientific leadership in the Department of Biomedical Science and to teach graduate students and medical students in conjunction with the University of Miami School of Medicine.

The Charles E. Schmidt College of Science is centered on the Boca Raton campus of Florida Atlantic University, approximately 50 miles north of Miami. Applicants should send a curriculum vitae along with a cover letter outlining the applicant's research and teaching interests and a list of three references to **Dr. Jang-Yen. Wu, Chair, Schmidt Fellow Search Committee, Department of Biomedical Science, Charles E. Schmidt College of Science, Florida Atlantic University, PO Box 3091, Boca Raton, FL 33431** by **January 15, 2003**.

FLORIDA ATLANTIC UNIVERSITY
ASSISTANT/ASSOCIATE PROFESSOR
DEPARTMENT OF BIOMEDICAL SCIENCE

Florida Atlantic University is seeking to appoint 5 faculty members at the rank of assistant professor or associate professor in the Department of Biomedical Science. The successful candidate must demonstrate the capability to perform outstanding biomedical research. Areas of research strength are listed in the Schmidt Senior Fellow advertisement. Applicants may complement these areas but may have expertise in any area of biomedical science. Excellent start-up funds and salaries are available.

The faculty member is expected to maintain an active research program and to obtain external funding. The faculty member will be expected to contribute to the teaching programs of the Department of Biomedical Science and to participate in teaching of medical students in conjunction with the University of Miami School of Medicine. Teaching expertise must be in one of the following areas: genetics, physiology, pharmacology, pathology, epidemiology, histology or microbiology. Applicants should send a curriculum vitae, along with a cover letter outlining the applicant's teaching and research interests, and a list of three references, to **Dr. Janet Blanks, Assistant Chair, Department of Biomedical Science, Charles E. Schmidt College of Science, Florida Atlantic University, PO Box 3091, Boca Raton, FL 33431** by **January 15, 2003**.

Florida Atlantic University is an Equal Opportunity/Access/Affirmative Action Institution

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL EYE INSTITUTE

Job Opportunities

With nation-wide responsibility for improving the health and well being of all Americans, the Department of Health and Human Services oversees the biomedical research programs of the National Institutes of Health and those of NIH's research Institutes.The National Eye Institute Intramural Program at the NIH campus, Bethesda, MD., is seeking highly qualified Postdoctoral Fellows, Research Associates and Staff Scientists in the following areas:

- **Molecular Biology**
- **Cell Biology**
- **Immunology**
- **Psychophysics**
- **Biochemistry**
- **Genetics**

Salaries range from $30,800 to $125,700 per annum, based on experience and type of appointment.

NEI offers an extensive benefits package that you may be eligible for, depending on the appointment mechanisms: Health Benefits, Life Insurance, Retirement Benefits, Annual and Sick Leave, Formal Training Program, Recruitment Bonus, Retention Allowance, Relocation Allowance, Loan Repayment Program, and Travel Benefits. Candidates interested in specific job opportunities at the NEI may visit the NEI web site at **http://www.nei.nih.gov/** listing the most current positions available.

NIH/NEI is an Equal Opportunity Employer

Assistant/Associate Professor - Zebrafish

Vanderbilt University has recently committed substantial resources toward expanding interdisciplinary efforts utilizing zebrafish to address significant problems in biology. This expansion includes construction of a large, state-of-the-art aquatic facility, development of a central genomics facility and substantial investments in other facilities for performing genetic manipulation and phenotype analysis in zebrafish. We are now seeking candidates to fill faculty positions at either the Assistant or Associate Professor levels in several University departments including Biological Sciences, Pharmacology, Cell and Developmental Biology, Medicine and Pediatrics. Opportunities for affiliations with one or more NIH-funded research centers also exist. Successful candidates will be provided laboratory space and generous start-up funds to initiate their independent research programs in a collegial and collaborative scientific environment.

Candidates should have Ph.D., M.D./Ph.D. or M.D. degrees and significant prior research experience. We are especially interested in candidates using zebrafish to 1) investigate molecular genetic mechanisms of organogenesis, especially that of cardiovascular, hematopoietic, gastrointestinal, renal and central nervous systems, 2) investigate mechanisms of disease, 3) develop novel or high throughput genetic screening methods and 4) develop methods of computational genomics.

Interested candidates should submit a current C.V., summary of research experience and future plans, and names and addresses of three references to:

Zebrafish Faculty Selection Committee
Division of Genetic Medicine, 529 Light Hall
Vanderbilt University
Nashville, TN 37232-0275
Tel: 615-936-2660; Fax: 615-936-2661
zebrafish@vanderbilt.edu

Vanderbilt University is an equal opportunity and affirmative action employer

UNIVERSITY OF CALGARY

Bioinformatician

Creating the future of health.

The **Department of Biochemistry & Molecular Biology** invites applications for a full-time position at the Assistant or Associate Professor level as a Bioinformatician with a background in Computer Science. This position offers an excellent opportunity to develop an independent research program within a dynamic, collaborative and multidisciplinary environment.

Duties include teaching in the bioinformatics stream of the Faculty of Medicine's Bachelor of Health Sciences (Honours) program, as well as undergraduate and graduate student supervision. The successful candidate will develop a vigorous and externally funded research program and is encouraged to seek external salary support. Current strengths of the Department include high-throughput genomics and proteomics core facilities and the Sun Centre of Excellence for Visual Genomics (SCEVG), one of Canada's leading bioinformatics installations. For more information about the Department, see http://www.fp.ucalgary.ca/bmb/; for SCEVG, see: http://www.visualgenomics.ca/

The SCEVG and the Department are part of the rapidly growing Faculty of Medicine, which is in the process of building major new research facilities. Calgary, Canada's fastest growing city, is vibrant and multicultural with a population of ~1,000,000, situated near the Rocky Mountains, Banff National Park and Lake Louise.

Qualifications include a PhD in Computer Science or equivalent, at least two years of post-doctoral experience and a proven record of research excellence in bioinformatics.

Please submit a curriculum vitae, a summary of research interests and reprints of the five most relevant publications, and arrange to have three letters of reference sent directly, by **January 10, 2003**, to: **Dr. Leon Browder**, Head of Biochemistry & Molecular Biology, Faculty of Medicine, 3330 Hospital Drive N.W., Calgary, Alberta, Canada T2N 4N1

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

www.ucalgary.ca

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 February 15, 2003. Inquiries should be directed to **Dr. J. R. Coleman** at **colema n@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.

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

CENTER DIRECTOR

The U.S. Department of Agriculture (USDA) is seeking candidates for the position of Director of the Plum Island Animal Disease Center (PIADC) at Greenport, New York. PIADC is the principal USDA laboratory for research and diagnosis of animal diseases which are exotic to the United States. Duties of the Director include direction and coordination of the research and diagnostic programs as well as the overall operation and management of the Center. Research is funded and administered through the Agricultural Research Service (ARS). The Foreign Animal Disease Diagnostic Laboratory is funded and administered through the USDA Animal and Plant Health Inspection Service (APHIS). The Director represents ARS and APHIS in communications in the veterinary and biomedical communities, representatives of other governmental agencies, congressional staff, livestock producers and commodity groups, news media and the general public, on foreign animal diseases.

The successful candidate will have the DVM or equivalent degree, demonstrated skill in organizing and leading multidisciplinary teams of scientists, and a strong record of personal research accomplishments. A Ph.D. or equivalent degree is highly desirable. This is a Senior Executive Service position with a salary range from $130K to $138K, depending on qualifications. U.S. citizenship required. For further information about the position, please call **Mrs. Wilda Martinez** at **215-233-6593**. For application procedures, call **Stacy Aldrich** at **301-504-1448**, or e-mail **saldrich@ars.usda.gov**. Applications must be received by **January 17, 2003**.

USDA/ARS IS AN EQUAL OPPORTUNITY EMPLOYER

Agricultural Research Service

USDA United States Department of Agriculture

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

The National Research Council and the National Institute of Standards & Technology

are seeking applications for

Postdoctoral Research Awards

to be offered in the field of

Microfluidics

The NRC and NIST will offer competitive awards to Ph.D. scientists for research to be conducted in microfluidic or 'lab-on-a-chip' technologies. **Qualified applicants must be US citizens.** Proposals concerning any aspect of 'lab-on-a-chip' technology development are welcome, although an emphasis on methods of biochemical or proteomic analysis is encouraged. The research effort in microfluidics at NIST is highly interdisciplinary, and consequently applicants with diverse technical backgrounds (physics, chemistry, biotechnology, engineering) are sought. The research will take place in the NIST Process Measurements Division or the Analytical Chemistry Division.

Prospective applicants should contact Laurie Locasio at laurie.locasio@nist.gov or David Ross at david.ross@nist.gov

Applications must be sent directly to the NRC and are to be submitted by February 1.

Application materials are available at:
http://national-academies.org/rap

For questions or assistance on the application process, contact:

E-mail: rap@nas.edu
Tel: 202-334-2760
Fax: 202-334-2759
Mail: National Research Council
The National Academies
500 5th Street NW
GR 322A
Washington, DC 20001

Juniata

COLLEGE

Huntingdon, PA 16652

Juniata College, a co-educational national liberal arts college, highly regarded for its academic excellence, seeks candidates for three Postdoctoral Fellow openings. The newest addition to our campus is a research facility. The new building, named the von Liebig Center for Science, is an 88,000 square foot building built for our Biology and Chemistry Departments. Juniata College is located in beautiful central Pennsylvania and has an enrollment of 1,390 students with a reputation for strong programs in the natural sciences. For more information about Juniata please visit our website at **www.juniata.edu**.

Cell and Molecular Biology Postdoctoral Fellow

The Department of Biology at Juniata (**www.juniata.edu/biology/**) invites applications for a von Liebig Teaching Postdoctoral Fellow in Cell and Molecular Biology, possible renewable for up to three years upon review. We seek an individual utilizing modern molecular techniques to address questions in cell biology. Teaching responsibilities may include participation in the combined Biology/Chemistry freshman laboratory, lecture courses and laboratories in cell and molecular biology and a specialty course in the successful candidate's discipline. This position is made available by a major expansion of the department's focus in the areas of Biochemistry, Cell and Molecular Biology (BCMB). Funds for research and research space will be provided.

Optical Physics Postdoctoral Fellow

The Department of Physics at Juniata (**www.juniata.edu/physics/**) invites applications for the position of von Liebig Teaching Postdoctoral Fellow in Optical Physics, with renewal for up to three years upon review. In particular, we are interested in applicants who can help develop a laser-based undergraduate teaching and research program. Teaching responsibilities may include upper-division Optics, participation in advanced physics laboratory courses, as well as lower division courses and labs. This position is made possible by a grant from the von Liebig Foundation to enhance the natural sciences at Juniata College. The goal of this position is to give the Fellow and permanent faculty an opportunity to involve undergraduates in their research interests, and to provide the Fellow with an opportunity to gain teaching expertise with undergraduates in a liberal arts setting. Dedicated research space and funds for research will be provided.

Immunoproteomics Postdoctoral Fellow

We also have an Immunoproteomics Postdoctoral Fellow position, which is available immediately to participate in an NIH-funded study with **Dr. Michael Boyle** to develop antibody based techniques to analyze post-translational processing of bacterial virulence factors using a mass spectral read out. The ideal candidate would have a Ph.D. in a biological science, with expertise in protein purification and molecular biology.

Applicants with earned Ph.D. and post-doctoral or teaching experience should submit one page statements of (1) teaching experience, philosophy, and interests and (2) a description of their research program appropriate for engaging undergraduates in research at a liberal arts college, as well as (3) a curriculum vitae, (4) undergraduate and graduate academic transcripts, and (5) three letters of recommendation to **Gail Leiby Ulrich, Director of Human Resources, Juniata College, 1700 Moore Street, Box P, Huntingdon, PA 16652**. You may also submit your information via e-mail to **hr@juniata.edu**. Review of applications will begin **January 15, 2003** and continue until the positions are filled. Please put the title of the position that you are applying for into your cover letter to insure proper processing of your application.

Juniata is committed to gender and cultural diversity and encourages applications from women and minorities. AA/EOE

GRADUATE PROGRAM

Graduate School of GENOME SCIENCE & TECHNOLOGY

The University of Tennessee (UT) & Oak Ridge National Laboratory (ORNL)
http://www.lsd.ornl.gov/gst/

Seeking Outstanding Students

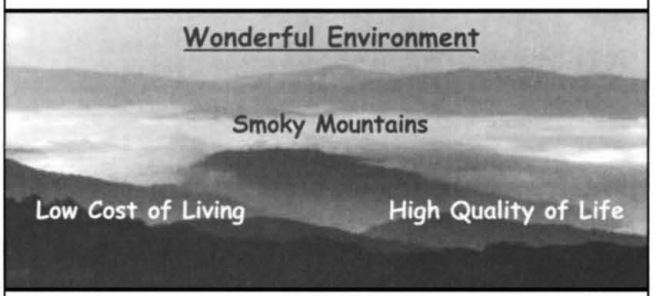
- Stipend of $18,000
- Full tuition waiver
- Accepting applicants with biological, physical or computational backgrounds

Interdisciplinary Program

- Access to facilities and expertise at UT and ORNL
- Sixty-five faculty
- Combines academic environment with team-oriented approaches

Areas of Study

- Mammalian Genetics
- Functional Genomics
- Structural Biology
- Proteomics
- Computational Biology
- Bioinformatics
- Bioanalytical Methodologies
  - Mass Spectrometry
  - X-ray Crystallography
  - NMR
  - Microarrays



To apply visit the website:
http://www.lsd.ornl.gov/gst/
Or Write: Dr. Jeffrey Becker, Director
Graduate School of Genome Science
& Technology
1060 Commerce Park
Oak Ridge, TN 37830-8026
(jbecker@utk.edu)

NORTHWESTERN FEINBERG SCHOOL OF MEDICINE
MULTIDISCIPLINARY CELL AND MOLECULAR BIOLOGY FACULTY POSITIONS

Northwestern University Feinberg School of Medicine is substantially expanding its faculty and is initiating supradepartmental searches to recruit outstanding individuals for full-time, tenure-track, faculty positions at the level of **ASSISTANT, ASSOCIATE OR FULL PROFESSOR** depending upon prior experience and research accomplishment. Applications will be considered in all areas of cell and molecular biology as related to disease. Basic biomedical research areas of special interest include cancer biology, stem cell biology, genomics, signal transduction mechanisms, cytoskeleton and cell motility, membrane trafficking, cell-matrix and cell-cell contacts, cell-cycle regulation and nuclear architecture.

Candidates should have a Ph.D and/or M.D. degree and exceptional research potential. Responsibilities of the positions are to develop dynamic, independently funded research programs and to participate in medical and graduate student teaching. Cluster hires of interacting faculty will be considered. High quality laboratory space and excellent start-up support will be provided.

Applications must include curriculum vitae, email address, brief statement of proposed research program and three letters of recommendation. Mail hard copy to: **Professor Gary Borisy, Chair, MCMB Search Committee, Northwestern University Feinberg School of Medicine, 303 East Chicago Avenue, Ward 7-342, Chicago, IL 60611** and, in addition, please submit electronic copy as attachment files (PDF or Word) to: **mcmbsearch@northwestern.edu**. To ensure consideration, completed applications must be received by **February 28, 2003**. Appointments will begin on or after September 1, 2003.

Northwestern University is an Equal Opportunity/Affirmative Action Educator and Employer and invites applications from all qualified individuals. Applications from women and minorities are especially sought. Academic Search # P161-P177-03.

ALFA WASSERMANN

WE ARE AN EQUAL OPPORTUNITY EMPLOYER

Opportunities in our Genomics - Proteomics Business Unit

Alfa Wassermann, Inc., an international healthcare company located in West Caldwell, NJ seeks several highly skilled Product Development Scientists with either molecular diagnostic assays or molecular biology-based research assays expertise. Experience should span all phases of product development including feasibility, format development and optimization, scale-up and transfer to manufacturing and commercial launch support. Experience in microwell plate technology and non-radioactive detection formats are a must. Excellent oral and written communication skills as well as project management skills are required.

Senior Scientist/Unit Manager

The candidate must have extensive industrial experience in molecular biology, biochemistry and assay development including 6 - 8 years of "hands on" experience in managing a group focused on product development. This senior position will lead and manage the development effort from the early concept stage to taking the product to market. B.S./M.S./Ph.D. in the biological sciences or chemistry is required.

Assay Development Scientists

Candidates must have extensive experience in molecular biology, biochemistry and assay development specifically related to creating products. 4 - 6 years of industrial experience in product development of either molecular diagnostic assays or molecular biology-based research assays. B.S./M.S. in the biological sciences or chemistry is required.

We offer a competitive salary, a comprehensive benefits package and a friendly work environment. Candidates should fax resumes and salary requirements to **Donna Cifelli, 973-882-8091** or email to **dcifelli@alfa wassermannus.com**. Please no phone calls.

UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA, CANADA

www.careers.ualberta.ca

Dean, Faculty of Science

The University of Alberta invites applications and nominations for the position of Dean of the Faculty of Science.

The University of Alberta has a clear vision, shared by the Faculty of Science: to be indisputably recognized, nationally and internationally, as one of Canada's finest universities and among a handful of the world's best. The University plays an integral role in the educational, business and cultural life of Alberta through the impact of its integrated mandate of teaching, research and community service. In excess of 4,500 courses are offered in 16 Faculties at the University of Alberta where more than 33,000 students are enrolled.

The Faculty of Science consists of approximately 300 full-time faculty members and 250 support staff in seven Departments that offer B.Sc., M.Sc. and Doctoral programs. The Departments are Biological Sciences, Chemistry, Computing Science, Earth and Atmospheric Sciences, Mathematical and Statistical Sciences, Physics and Psychology. In addition to offering undergraduate programs to over 6,000 full-time students, the academic staff members are actively involved in graduate instruction and research. Research activities generate approximately $55 million in grant and contract support. Further information may be obtained from the World Wide Web at http://www.ualberta.ca/SCIENCE

The Dean is responsible to the Provost and Vice-President (Academic) for the supervision and administration of the academic programs, budget, and all activities of the Faculty. Candidates should have proven administrative ability, well-developed leadership skills and strong academic qualifications in a field of research that enhances the activities of the Faculty.

The appointment will take effect on July 1, 2003 or as soon as possible thereafter.

Written nominations or applications, accompanied in the latter case by a resume of qualifications and experience, and the names of three referees should be submitted to:

Dr. D.R. Owram, Provost and Vice-President (Academic)
2-10 University Hall, University of Alberta
Edmonton, Alberta, Canada T6G 2J9
E-mail: provost@ualberta.ca

Deadline: December 15, 2002

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. If suitable Canadian citizens and permanent residents cannot be found, other individuals will be considered. The University of Alberta hires on the basis of merit. We are committed to the principle of equity in employment. We welcome diversity and encourage applications from all qualified women and men, including persons with disabilities, members of visible minorities, and Aboriginal persons.

GLOBAL OPPORTUNITIES

FACULTY POSITIONS DEPARTMENT OF LIFE SCIENCE K-JIST

FACULTY POSITIONS are available in the Department of Life Science at the Kwangju Institute of Science and Technology (K-JIST), a government-funded graduate school in Gwangju, Republic of Korea. We seek candidates whose research interests lie in the fields listed below.

Systems Biology, Computational Biology, Bioinformatics
Cellular and Developmental Biology
Nanobiotechnology, Chemical Genomics
Neurodegenerative diseases

K-JIST offers an electronic version of its application forms in Microsoft Word format in the webpage (**http://www.kjist.ac.kr/english**). Applicants should submit all application materials by e-mail or fax to:

Section of Academic Affairs, Kwangju Institute of Science and Technology, 1 Oryong-dong, Buk-gu, Gwangju 500-712, Republic of Korea (Phone: +82-62-970-2043, Fax: +82-62-970 2049, e-mail: academy@kjist.ac.kr)

A competitive salary, faculty housing, laboratory space and generous startup funds are available. Appointment will be made either in mid February or in mid August. Applications will be accepted until the positions are filled and qualified women are encouraged to apply.

DEPARTMENT OF HEALTH AND HUMAN SERVICES NATIONAL INSTITUTES OF HEALTH NATIONAL HUMAN GENOME RESEARCH INSTITUTE

Program Director, Translational Research

The National Human Genome Research Institute (NHGRI) seeks candidates for a Program Director position to help develop and manage a grants program in research in the translation of genomics to medicine. This is a new research program at the NHGRI that is intended to accelerate the development and application of genomic resources and genomics-based research approaches to the development of diagnostics, therapeutics, and effective preventative strategies for clinical medicine.

Responsibilities will include developing new research initiatives, administering a portfolio of research awards, and interacting with researchers and related programs at NHGRI, NIH and other funding agencies (both public and private, in the U.S. and abroad). Candidates must have an M.D, Ph.D., or equivalent-level degree and considerable research experience in the medical applications of genetics and genomics. Preference will be given to candidates with experience in research management. The ability to work both independently and collaboratively as needed is required, as are strong communication, writing, and organizational skills. The position may be filled on a permanent or rotating basis. Salary will be commensurate with experience. Send CV, Bibliography and the names of 4 references by email: **nhgrijobs-r@mail.nih.gov** or FAX: **(301)480-2770** by **January 15, 2003**.

With nationwide responsibility for improving the health and well being of all Americans, the Department of Health and Human Services oversees the biomedical research programs of the National Institutes of Health. **http://www.os.dhhs.gov/**.

HHS and NIH are Equal Opportunity Employers

UNIVERSITY OF FLORIDA

Department Chair of Environmental Engineering Sciences

Applications and nominations are invited for the position of Chair of the Department of Environmental Engineering Sciences at the University of Florida. Candidates are expected to hold a doctorate degree in an appropriate engineering or related field; have a proven record of excellence in research, teaching, and related scholarly activities; and to have demonstrated administrative/management talents and experience.

The University of Florida is a member of the American Association of Universities. The nationally prominent College of Engineering recorded over $76 million in research expenditures in 2001-2002. The College has more than 6,200 students and annually awards about 100 Ph.D. degrees and more than 500 masters and 800 bachelors degrees.

The Department of Environmental Engineering Sciences, ranked nationally among the Top 15 in its field, is one of 11 Departments in the College and has offered its own academic programs since 1966. It is one of the largest departments in this discipline with 18 full time engineering and science faculty, enrolls over 200 undergraduate and graduate students, and annually grants 30 ABET accredited B.S. degrees, and approximately 35 masters, and 10 doctorate degrees. The Web address is **www.ees.ufl.edu**.

Submit applications or nominations to **Dr. Joseph J. Delfino, Interim Chair, Department of Environmental Engineering Sciences, A.P. Black Hall, Box 116450, University of Florida, Gainesville, FL 32611-6450, (352) 392-9377**. The Search Committee will begin reviewing applications in mid-December, 2002 and will continue to receive applications until the position is filled. The position is available in summer 2003 or earlier, depending on the availability of the successful candidate. Applications should contain a current curriculum vitae, and the names, addresses [postal and email], and phone numbers of five references.

The University of Florida is an Affirmative Action, Equal Opportunity Employer and encourages applications from women and minority group members.

University of California, Berkeley

FACULTY POSITIONS IN BIOENGINEERING

The Department of Bioengineering at the University of California, Berkeley invites applications for two tenure-track positions in the areas of BIO-NANOTECHNOLOGY and COMPUTATIONAL BIOLOGY at the assistant, associate or full professor level starting July 1, 2003 (appointments subject to budgetary approval). The Department of Bioengineering has a strong undergraduate degree program and a joint educational program with the University of California, San Francisco (UCSF), with numerous inter-campus research activities and a Graduate Group that is fully integrated between the two campuses. The position also includes opportunities for involvement in relevant programs at the Lawrence Berkeley National Laboratory (LBNL). The juxtaposition of two major research universities and an outstanding national research institute provides an exceptional environment for both research and training in this rapidly growing field. The successful candidate will have a unique opportunity to provide intellectual and technological leadership in bioengineering and facilitate programmatic interactions across the University of California.

Applicants should have (or be about to receive) a doctoral degree or equivalent in engineering or the physical or biological sciences, and a research focus in either the area of nanotechnology relevant to bioengineering OR computational biology, functional genomics, or modeling of cellular processes. Applicants should clearly indicate to which position they are applying. We seek individuals with demonstrated excellence in research, and the potential for excellence in teaching and leadership. Successful candidates will be expected to establish a pre-eminent research and educational program, and develop and teach courses in appropriate areas of science and engineering.

Applicants should send a complete curriculum vitae, a selection of publication reprints (five or less), a brief statement of future research plans and teaching interests, and the names of at least three references to: **Chair Thomas F. Budinger, Department of Bioengineering, 459 Evans Hall MC 1762, University of California, Berkeley, CA 94720-1762.** The review of applications will commence on January 1, 2003; all applications must be received by March 1, 2003 for consideration in this year's recruitment cycle.

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

Chair, Department of Pathology and Anatomical Sciences
School of Medicine and Biomedical Sciences
University at Buffalo
The State University of New York

The School of Medicine and Biomedical Sciences seeks applications and nominations for the position of Chair of the Department of Pathology and Anatomical Sciences. The Chair will participate in and provide leadership for the clinical, teaching, and research programs of the Department within the School and with associated institutions.

The successful applicant will have the combination of personal skills and administrative experience to supervise this important and diverse academic unit, as well as a record of academic and research achievement commensurate with appointment as a tenured Professor. He/she must have a strong commitment to medical and graduate education, and will have an MD or PhD degree in an appropriate discipline or specialty. Salary, space and all other resources are negotiable.

Nominations or applications should include a current curriculum vitae, and the names and addresses of at least three individuals who may be contacted for recommendations. Vitae may also be submitted by email. Applications should be sent to: **Dr. Kenneth Blumenthal, c/o Nancy Glieco, Office of the Vice President and Dean, School of Medicine and Biomedical Sciences, 155 Biomedical Education Building, SUNY at Buffalo, 3435 Main Street, Buffalo, NY 14214. Email: glieco@buffalo.edu.**

The University at Buffalo is an AA/EOE.

The Bauer Center for Genomics Research
Harvard University

Postdoctoral opportunities in Systems Biology for Mathematicians, Physicists, Computer Scientists, Engineers

The Bauer Center seeks applications for up to two postdoctoral positions, each lasting two years, from candidates in the physical and systems sciences who wish to contribute to biology. The successful candidates will have outstanding research backgrounds in mathematics, physics, computer science, engineering or a related discipline and the ability and motivation to develop their own research agenda in the new field of systems biology. The Bauer Center provides a unique environment for learning interdisciplinary science and for combining theory and experiment in biology. For more information, see the URL listed below.

To apply, please arrange for the following to reach the address below by the closing date of **31 January 2003**: (1) your CV, with a list of publications; (2) a short (no more than two pages) account of what you think you can contribute during your postdoc; (3) at least two letters of reference in support of your application.

Please contact: **Jeremy Gunawardena, Head of Systems Biology, Bauer Center for Genomics Research, Harvard University, 7 Divinity Avenue, Cambridge, MA 02138, USA;**
T: (617) 384 9683; F: (617) 495 2196;
E: jgunawardena@cgr.harvard.edu;
W: www.cgr.harvard.edu/jobs/jobs.html.

Harvard University is an Affirmative Action, Equal Opportunity Employer.

Faculty Positions

The Emory University School of Medicine, Department of Pediatric Hem/Onc/BMT and the AFLAC Cancer Center and Blood Disorders Service is seeking outstanding individuals for faculty positions from the rank of Assistant to Full Professor. The successful candidates will join a strong translational research program focused on experimental therapy for childhood cancer.

Individuals with a PhD and/or MD interested in translational research for the treatment of sarcomas or CNS tumors are particularly encouraged to apply. Candidates will receive highly competitive startup packages and be expected to maintain extramurally-funded research programs. Additional opportunities for collaboration are available within the Winship Cancer Center, and throughout the University. Individuals should express their interest by sending a curriculum vitae and brief research proposal to: **William G. Woods, M.D., Professor and Director, Pediatric Hematology/Oncology/Blood and Marrow Transplantation, Children's Healthcare of Atlanta at Egleston, 1405 Clifton Road NE, Room 319, Atlanta, GA 30329.** EOE.

Children's Healthcare of Atlanta

EMORY SCHOOL OF MEDICINE

AFLAC Cancer Center & Blood Disorders Service

Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse

With nation-wide responsibility for improving the health and well-being of all Americans, the Department of Health and Human Services oversees the biomedical research programs of the National Institutes of Health and those of NIH's research Institutes. The National Institute on Drug Abuse (NIDA) is recruiting for an MRI PHYSICIST/SOFTWARE ENGINEER in the newly established MRI Physics Unit located in Baltimore, MD, and led by Dr. Yihong Yang. The Unit is a component of NIDA's Intramural Research Program, Neuroimaging Research Branch. The successful candidate will focus on pulse sequence development on a Siemens 3 Tesla human scanner, and on the development and optimization of BOLD and arterial spin-labeling perfusion imaging techniques. The candidate will also have the opportunity to work with researchers in the Branch to develop functional and/or structural MRI methods for applications in drug abuse. This is an exciting opportunity working in a multidisciplinary research environment committed to the development and application of MRI technologies to address problems of drug abuse. A soon to be ordered 9.4T small-bore system will provide additional opportunities and challenges. The candidate must possess a Ph.D. in MR Physics, Mathematics or Engineering, and knowledge of pulse sequence programming. Experience with C++, Matlab, and IDL is desirable. Salary range ($38,000 to $75,000) will be set commensurate with research experience and accomplishments. A full Civil Service package of benefits (including retirement, health, life, and long term care insurance; Thrift Savings Plan participation, annual and sick leave) is available.

Interested applicants must submit a Curriculum Vitae with bibliography, a statement of research interests and goals, three letters of recommendation from noncollaborators, and a copy of the doctoral degree (if in a foreign language, include a certified English translation). Send applications directly to **Dr. Elliot Stein, Chief, Neuroimaging Research Branch, NIH/NIDA/IRP, Building C, Room 381, 5500 Nathan Shock Drive, Baltimore, MD 21224 (410-550-1440 (Voice); 410-550-1441 (FAX); estein@intra.nida.nih.gov**. Applicants may apply in person, by mail, by e-mail, or by FAX. The position is open until filled; however, cut-off dates will be used for consideration of applications received.

HHS and NIH are Equal Opportunity Employers

Position Announcement
Chair, Department of Animal Science
Iowa State University

Iowa State University invites nominations and applications for the position of Chair, Department of Animal Science. An outstanding scientist with a distinguished record in research, teaching and/or outreach/extension and demonstrated effective leadership abilities is sought. A description of departmental mission, programs, faculty, and facilities is available at **http://www.ans.iastate.edu/**.

Applicants are expected to have demonstrated visionary leadership and superior management skills for a department and budget of this size. The successful candidate must have a forward-looking, land-grant philosophy; appreciate and promote scholarship in all endeavors of the department; foster diversity throughout departmental programs. A strong understanding of undergraduate and graduate teaching, basic and applied research, and outreach/extension programs is essential. Administrative experience and a history of obtaining extramural funding are highly desirable. The Chair is expected to represent the department positively to the ISU administration, allied industry groups and the wider agricultural community, alumni, and government agencies. They will be expected to promote the national and international stature of the Department. The successful candidate must have a distinguished record of scholarly accomplishments commensurate with that of a tenured professor in Animal Science. It is anticipated that the chair will remain active professionally. Candidates should hold a doctorate in Animal or Biological Sciences or a closely related field. Broad-based experience in academia, government or industry will be viewed favorably.

Nominations and letters of application, including a curriculum vitae, four or more references and a statement of interest should be sent to **Dr. Diane Birt, Search Committee Chair, Professor and Chair of Food Science and Human Nutrition, College of Agriculture, 138 Curtiss Hall, Iowa State University, Ames, IA 50011-1050, Attn: Cindy Hansen**. Electronic submission to **dbirt@iastate.edu** is encouraged. Please direct questions to Dr. Birt at 515-294-3011 or by using the above addresses. Applications will be viewed starting **January 31, 2003** and will continue until position is filled.

UCD

UNIVERSITY COLLEGE DUBLIN

An Coláiste Ollscoile Baile Átha Cliath

FACULTY OF SCIENCE

DEPARTMENT OF PHARMACOLOGY

CONWAY INSTITUTE OF BIOMOLECULAR AND BIOMEDICAL RESEARCH

LECTURER

(Ref: 001148)

Applications are invited for a permanent academic appointment at the level of Lecturer in the Department of Pharmacology. The research of the Department forms an integral part of the research of the Conway Institute of Biomolecular and Biomedical Research. The Conway Institute will provide an International Centre of Excellence by fostering dynamic interactions among innovative researchers within a multidisciplinary environment underpinned by state-of-the-art technologies and technical expertise, including gene chip technology, advanced proteomics suite, transgenics/knockout maintenance facilities, a bioinformatics core and a range of in vivo model systems.

The successful candidate will be expected to play an active role in the research of the Conway Institute and will be also expected to contribute to the undergraduate and postgraduate teaching programmes of the Department of Pharmacology in the Faculties of Science and Medicine.

Candidates with successful research track records in publishing and attracting external funding whose research interests involve identification of novel therapeutic targets and/or developing novel therapeutic strategies in an integrative way using cellular, whole animal and/or computational models in areas such as inflammation/infection/immunity, cancer, vascular biology or neuroscience using the techniques of proteomics, functional genomics and/or bioinformatics are encouraged to apply. Applications are welcome from academics who are at a well-developed stage of their careers and who have a substantial research record. This appointment will be at the upper end of the scale.

In addition the recently revised procedures for promotion to Senior Lecturer provide for early consideration for promotion (following award of tenure) for those staff that achieve high standards of academic achievement and output.

Informal enquiries about the post to:

Professor Michael P. Ryan, Head of Department
Tel: +353-1-716 1558; Email: michael.p.ryan@ucd.ie
Department website: www.ucd.ie/~pharmacol/pharmhome/html
Conway website: www.ucd.ie/conway

College Lecturer: €42,064 - €68,188

Prior to application, further information (including application procedure) should be downloaded from our website: **www.ucd.ie/vacancies** or obtained from the:

Personnel Department, University College Dublin, Belfield, Dublin 4, Ireland. Requests on a postcard or by fax only (quoting the above reference number) Fax: +353-1-269 2472

Email: Academic.Appointments@ucd.ie

Closing date: **not later than 12.00 noon on Thursday, 30 January 2003.**

National University of Ireland, Dublin

UCD IS AN EQUAL OPPORTUNITIES EMPLOYER

UNIVERSITY OF DELAWARE

FACULTY POSITION
Biomedically-Related Science and Engineering

Applications are sought for a junior-level, track faculty position in the Department of Electrical and Computer Engineering. The position is available starting September 2003. Candidates with research interests and experiences in the following areas are particularly sought: neuroscience, signal and image processing, MEMS, sensors, nanotechnology, bioinformatics, optical and laser systems, and cellular and tissue engineering. Applicants should have a Ph.D. in electrical engineering or a closely related field in biomedical or physical sciences. Successful candidates are also expected to have demonstrated excellence in innovative research and have the potential for high-quality teaching and mentoring. Faculty members are expected to carry out a vigorous research program and teach and supervise students at the graduate and undergraduate levels. The Department is growing dynamically, and research expenditures and student enrollment have more than doubled over the past two years. The Department has 23 faculty members with more than $7.5 million in external research funding. Applicants should send a résumé, a statement of research and teching interests and achivements, and a list of at least three references to: **Faculty Search Committee, Department of Electrical and Computer Engineering, University of Delaware, Newark, DE 19716.** Application material may also be electronically submitted at **e-mail: fsearch@ece.udel.edu**. Review of applications will begin immediately and will continue until the position is filled. *The University of Delaware is an Equal Opportunity Employer that encourages applications from minority group members and women.*

TENURE-TRACK/TENURED FACULTY POSITIONS
Virology and Medical Microbiology

The Department of Microbiology and Immunology, Finch University of Health Sciences/The Chicago Medical School, is seeking two **ASSOCIATE PROFESSORS** or **PROFESSORS** with strong publication records and current extramural research funding in the fields of virology and medical microbiology emphasizing molecular pathogenesis and immunology, teaching medical and graduate students, and directing training of Doctoral and/or Postdoctoral Research trainees. The Department has established strength in the areas of molecular biology, immunology, and host-parasitic relationships. Excellent laboratory space and facilities, substantial start-up funds, and a competitive salary will be provided.

Applicants should send curriculum vitae, a summary of research accomplishments and future research plans, and names of three references to: **Yoon B. Kim, M.D., Ph.D., Professor and Chairman, Department of Microbiology and Immunology, Finch University of Health Sciences/The Chicago Medical School, 3333 Green Bay Road, North Chicago, IL 60064.** *Finch University of Health Sciences/The Chicago Medical School is an Equal Opportunity Employer.*

CHEMISTRY-BIOCHEMISTRY

ASSISTANT PROFESSOR in biochemistry; Ph.D. required. Teaching duties to include biochemistry, general chemistry, and upper-level courses. An active research program in biochemistry is expected. Send letter of application; unofficial transcripts; statement of teaching philosophy; statement of research interests; outline of a two-semester biochemistry course with laboratory; and three letters of reference by December 31, 2002, to: **Dr. Sung Moon, Department of Chemistry, Science 201, Adelphi University, South Avenue, Garden City, NY 11530.** *Adelphi University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR
Division of Neurosciences
Beckman Research Institute of the City of Hope

The Division of Neurosciences, Beckman Research Institute of the City of Hope, invites applications for a faculty position at the Assistant or Associate Professor level. As part of our continuing expansion, we seek candidates with research interests in the area of vertebrate neural development, broadly defined to encompass study of fundamental questions of phenotypic commitment and plasticity, differentiation, and synaptogenesis. Investigations involving stem cells and neural progenitors are of particular interest. This new position will complement the existing divisional focus on developmental neurobiology. The person appointed will have the opportunity to participate in the Graduate School of Biological Sciences. Compensation (institutionally funded) and start-up funds will be highly competitive.

The Beckman Research Institute provides an environment that encourages interdisciplinary collaborative interactions with institutional programs in molecular biology and gene regulation, immunology, diabetes and endocrinology, and hematology and bone marrow transplantation. In addition, the Institute offers an unusually rich set of core resources in transgenic mouse production, microarray-based analyses, oligonucleotide and peptide synthesis, DNA and peptide sequencing, and mass spectrometry/NMR. Further information on the Beckman Research Institute and the Division of Neurosciences is available at **website: http://www.cityofhope.org/bricoh/research%5Freport/default.asp**.

Candidates should have a Ph.D. or M.D. degree, postdoctoral experience, and the potential to establish or to have established an independent research program. Applicants should submit curriculum vitae; a statement of research interests and plans; and the names, addresses, and telephone numbers of at least three references to: **Michael E. Barish, Ph.D., Professor and Chair, Division of Neurosciences, Beckman Research Institute of the City of Hope, 1450 East Duarte Road, Duarte, CA 91010-3011.** We will begin evaluating applications during November 2002 and will consider them until the middle of January 2003.

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

MICROBIOLOGIST

The Department of Biology invites applications for a tenure-track **ASSISTANT PROFESSORSHIP** in microbiology to start August 2003. Ph.D. is required and postdoctoral training is a plus. The successful applicant will be expected to teach courses for students in prenursing and allied health programs, develop an upper-level/graduate course in their specialty, and mentor undergraduate and Master's-level students. Research area is open. Submit a letter of application; curriculum vitae; reprints; statement of teaching philosophy; description of research interests; and three letters of recommendation to: **Dr. Frank Paladino, Chair, Department of Biology, Indiana University/Purdue University, Fort Wayne, IN 46805-1499** by January 15, 2003. Department **website: http://www.ipfw.edu/bio.** *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR of fisheries biology. Full-time, tenure-track position. Ph.D. required at time of appointment. Applicants must have special expertise in ichthyology and demonstrated superior ability to teach undergraduates. Preference will be given to candidates with a marine orientation and advanced knowledge of fish genetics but serious consideration will be given to all strong applicants with broad-based training in biology of fishes. Submit curriculum vitae, three letters of reference, and transcripts to: **Dr. David Hankin, Chair, Department of Fisheries Biology, Humboldt State University, Arcata, CA 95521. E-mail: dgh1@humboldt.edu.** Applications accepted until 15 February 2003 or until position is filled. *Humboldt State University is an Equal Opportunity/Title IX Employer.*

POSITIONS OPEN

CORIELL INSTITUTE for Medical Research

RESEARCH FACULTY POSITION
Study of Stem Cell Biology

The Coriell Institute for Medical Research invites applications for appointment as a member of its research faculty at either the junior or senior level. Candidates must have training and experience of the highest quality and an exciting research program addressing fundamental questions in the area of the biology of stem cells. Desirable programs might include those in the regulation of stem cell differentiation, the role of growth factors in stem cell replication, the biology of growth factor receptors, or the molecular genetics of hematopoietic precursors. The research program must be funded or, in the case of a junior applicant, eminently fundable.

Coriell is an independent, not-for-profit research organization founded in 1953. Its current programs center on the biology of neuronal, pancreatic, hematopietic, muscle, and adipose stem cells; genetic diversity; and cell culture and banking. Coriell offers an excellent research environment, laboratory facilities, and generous start-up funds and benefits package. Salary is negotiable.

Candidates should submit curriculum vitae, a statement of research interests and accomplishments, and a list of at least three references to: **Director of Human Resources, Coriell Institute for Medical Research, 403 Haddon Avenue, Camden, NJ 08103. FAX: 856-964-0254; e-mail: ctule@cimr.umdnj.edu; website: cimr@arginine.umdnj.edu.** Applications will be accepted until the position is filled. *Affirmative Action/Equal Opportunity Employer.*

TENURE-TRACK FACULTY POSITION
Department of Neurosciences
University of California San Diego
School of Medicine

The Department of Neurosciences at the University of California San Diego School of Medicine (UCSD) invites applications for a tenure-track **ASSISTANT PROFESSOR** position in functional neuroimaging beginning February 1, 2003. In exceptional cases, applications for a senior appointment will also be considered. The position has been created in conjunction with the opening of the new UCSD Center for Functional Magnetic Resonance Imaging, the largest brain imaging research facility in the western United States. The Center is exclusively dedicated for research and is located on the School of Medicine campus in a new building that houses two magnets for human studies, one for nonhuman primate studies and one for studies with rodents. The successful candidate will be expected to develop an independent program of research that makes use of these facilities and complements current departmental strengths in systems neuroscience, cognitive neuroscience, developmental neuroscience, and clinical neuroscience. In addition, the candidate will be expected to provide high-quality teaching in the graduate/medical school curriculum. The successful candidate must have completed the Ph.D. or M.D. degree and should have two or more years of postdoctoral experience in functional neuroimaging with expertise in experimental design, data analysis, and the development of analysis techniques that can improve the usefulness of imaging tools in the scientific community. Applications will be reviewed beginning December 1, 2002, and will be accepted until the position is filled. Salary will be commensurate with rank and experience and will be based on University of California pay scales. A cover letter outlining research and teaching interests, current curriculum vitae, representative reprints (no more than three), and three letters of reference (under separate cover) should be sent to: **Chair, Neurosciences Search Committee, c/o Peggy Chambers, UCSD, 9500 Gilman Drive, La Jolla, CA 92093-0624.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

REGINALD A. DALY POSTDOCTORAL FELLOWSHIP
HARVARD UNIVERSITY
DEPARTMENT OF EARTH AND PLANETARY SCIENCES

The Department of Earth and Planetary Sciences at Harvard University invites applicants for the Reginald A. Daly Postdoctoral Research Fellowship.

The Department seeks outstanding candidates in the broad field of Earth and Planetary Sciences. These honorific postdoctoral fellowships are awarded for a one-year period, with an anticipated extension for a second year. The annual salary is $40,000 with additional funds available for research support. Applicants should have a recent Ph.D. or should be 2003 degree candidates. Applications should include a curriculum vitae, names and contact information for three referees, and statements of the applicant's doctoral research and postdoctoral research plans. Send applications to:

Daly Postdoctoral Search Committee
c/o Chenoweth Moffatt
Department of Earth and Planetary Sciences
Harvard University
20 Oxford Street
Cambridge, MA 02138

Applications are due January 15, 2003. Completion of the Ph.D. is required by the time of the appointment. We particularly encourage applications from women and minorities. For more information about the Department, please visit our website at **www.eps.harvard.edu**.

Harvard University is an Affirmative Action/ Equal Opportunity Employer.

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

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

The National Institute on Aging, a major research component of the National Institutes of Health (NIH) and the Department of Health and Human Services, is recruiting for a Health Scientist Administrator to serve as Program Director and lead a research program in neuroepidemiology, which includes studies of prevalence, incidence, and risk factors for Alzheimer's disease and other dementias of aging. The individual selected for this position will develop the program, define its research questions and goals, encourage scientists with appropriate expertise and interest to develop and submit research grant applications, and foster interactions with other epidemiology programs across NIH.

The successful individual will possess an M.D. or Ph.D. degree in epidemiology-relevant biological or behavioral disciplines, have training and research experience in epidemiology as related to the aging process with preference for a focus on aging-related neurodegenerative diseases such as Alzheimer's disease, and have leadership/managerial skills and experience that include responsibility for the conduct and administration of biomedically related research.

Salary range is $55,694 to $101,742 and will be commensurate with research experience and accomplishments, and a full Civil Service package of benefits (including retirement, health, life and long term care insurance, Thrift Savings Plan participation, etc.) is available.

For additional information on this position, and for instructions on submitting your application, please see our website, at: **www.jobs.nih.gov**, or contact the **NIA Human Resources Office** at **301-496-5347**. Refer to announcement # **NIA-02-538**. Applications must be postmarked by **January 31, 2003**.

HHS and NIH are Equal Opportunity Employers

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

GROUP LEADER / ASSISTANT PROFESSOR

The Brain & Mind Institute at EPFL, Lausanne, Switzerland is seeking applications for a Group Leader to develop and lead an interdisciplinary research program aimed at understanding perception of flavors. Experience in biophysics, receptor physiology, electrophysiology is required and experience with molecular biological methods would be an advantage. There is the option of promotion to tenure-track.

Applicants should send a CV, including names, phone numbers and e-mail addresses of three referees by e-mail to

brain_mind@epfl.ch or to EPFL
Brain & Mind Institute
SV-LNMC-AAB118
1015 Lausanne, Switzerland

Review of applications will begin January 6, 2003.

Director
Max Planck Institute for Demographic Research

Rostock, Germany

MAX-PLANCK-GESELLSCHAFT

The Max Planck Society is seeking applications for the new position above in its Institute for Demographic Research.

The Institute is devoted to basic demographic research and currently has two directors and research divisions. The successful applicant will head a third, complementary division. Applicants of high merit are invited to submit an outline of the area of demographic research or related fields they want the third division to pursue under their leadership and to include a CV and publication list in their submission. They should also indicate the potential relationship of this research program to those of the two existing divisions. The successful applicant will serve as Managing Director of the Institute in alternation with the other two directors. Knowledge of German is desirable.

For details about the Institute, please visit www.demogr.mpg.de.

The Max Planck Society wishes to increase the share of women in areas in which they are underrepresented. Women are thus strongly encouraged to apply.

Preference will be given to disabled persons with equal qualification.

Applications should be sent to the
Chairman of the Humanities Section of the Max Planck Society
Professor Dr. Jürgen Basedow, c/o Ms. Karen Friedman
Administrative Headquarters
Max Planck Society for the Advancement of Science
P.O. Box 10 10 62, 80084 Munich, Germany
to arrive no later than 1 February 2003.

Washington University in St. Louis
SCHOOL OF MEDICINE

FACULTY POSITIONS
Cell Biology and Physiology

The Department of Cell Biology and Physiology at Washington University School of Medicine invites applications for tenure-track positions at the rank of **ASSISTANT PROFESSOR**. Outstanding individuals investigating fundamental problems in cell biology are encouraged to apply. Candidates must demonstrate the ability to develop an independent research program and a commitment to excellence in graduate education.

Applicants must have a Ph.D. and/or M.D. and postdoctoral experience. Please send curriculum vitae, a summary of current and proposed research programs, and arrange for three letters of recommendation to be sent to:

Cell Biology and Physiology Search Committee
Attention: Dr. Maurine Linder
Washington University School of Medicine
660 South Euclid Avenue, Campus Box 8228
St. Louis, MO 63110
E-mail: linder@cellbiology.wustl.edu

Applications should be received by January 15, 2003.

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

RESEARCH FACULTY

The Department of Physiology and Cell Biology at University of Nevada School of Medicine is seeking Research Faculty to conduct investigations supported by federally funded and/or agency-funded grants into the ionic basis of rhythmicity in smooth muscles, neural regulation of smooth muscles, endothelium-dependent regulation of vascular smooth muscles, biochemical and molecular biological studies of phosphatases and their substrates, ionic mechanisms in cardiac muscles, development of excitation and contraction mechanisms in smooth and cardiac muscles, or developmental neurobiology. Various molecular, biochemical, electrophysiological, and imaging techniques are utilized in these studies. Requires Ph.D., M.D., or equivalent degree in medical sciences. Experience with smooth or cardiac muscle physiology, molecular biology, biochemistry, biophysics, electrophysiology, or morphological techniques required. Evidence of research productivity and a strong publication record is important. Send letter of application, curriculum vitae, and three references to: **Kenton Sanders, Ph.D., Department of Physiology and Cell Biology/352, University of Nevada School of Medicine, Reno, NV 89557**. Review of applications will begin January 1, 2003. Applications will be accepted until June 1, 2003. *Affirmative Action/Equal Opportunity Employer.*

MARINE SCIENTIST

The Department of Environmental Sciences, Western Washington University, invites applications for a tenure-track **ASSISTANT/ASSOCIATE PROFESSOR**. Applicant must have a Ph.D. at the time of application; evidence of upper- and lower-division teaching experience at the university level; and research specialization in coastal processes (hydrodynamics, fisheries resources, or seagrass community ecology preferred). Send résumé, cover letter addressing qualifications, statement of teaching philosophy, evidence of teaching experience, and name and address of four references to: **Marine Scientist Search Committee, Department of Environmental Sciences, Western Washington University, Bellingham, WA 98225. Telephone: 360-650-2844; website: http://www.wwu.edu/~huxley** for full position announcement including all qualifications. Application must be received by January 6, 2003, for full consideration. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

UNIVERSITY OF HAWAII AT HILO

ASSISTANT or **ASSOCIATE** or **FULL PROFESSORS** of marine science (**CORAL REEF BIOLOGIST/ECOLOGIST**, Position Number 84233; **CHEMICAL OCEANOGRAPHER**, Position Number 83207); College of Arts and Sciences, general funds; full-time; tenure track; nine-month-type appointment; to begin approximately August 2003 pending funding and position clearance. Duties: Teach undergraduate courses in (1) marine biology, marine ecology, monitoring methodology or (2) chemical oceanography, marine monitoring techniques, introductory oceanography. Successful candidates in each position will also teach laboratories/field excursions for the above courses and courses in their area of specialty; conduct research and publish results; seek extramural funding; advise students; participate in community service activities related to marine science; participate in university governance activities including committees, advisory boards, etc.; and may participate in marine science summer programs for additional compensation. Minimum qualifications: Ph.D. in (1) biology, zoology, or oceanography or in (2) oceanography or chemistry from an accredited college or university; research experience with relevant publications; demonstrated expertise in teaching. For the Associate: five years of full-time college or university teaching experience at the rank of Assistant Professor and demonstrated leadership experience at the level of a university science program. For the Full Professor: five years of full-time college or university teaching experience at the rank of Associate Professor and scholarly activity of international recognition. Desirable qualifications: postdoctoral teaching at the college or university level, experience in supervising undergraduate research activities, and record of extramural funding. Applications: Send letter of application, curriculum vitae, and arrange to have three letters of recommendation sent to: **Dr. Marta de-Maintenon (Coral Reef Biologist/Ecologist position)** or **Dr. Michael Parsons (Chemical Oceanographer position), Marine Science Department, University of Hawaii at Hilo, 200 West Kawili Street, Hilo, HI 96720-4091**. Closing date: postmarked no later than January 31, 2003. *An Equal Employment Opportunity/Affirmative Action Employer; Disabled/Minorities/Veterans/Women.*

ASSISTANT PROFESSOR OF PLANT BIOLOGY
Lehman College
The City University of New York

Lehman College of The City University of New York (CUNY) is hiring tenure-track faculty with research interests in plant signaling and/or regulation as part of a multiyear, CUNYwide initiative in the biosciences. The successful candidate will join a strong and active plant sciences Doctoral program that is a long-standing partnership between CUNY and The New York Botanical Garden (see **website: http://a32.lehman.cuny.edu/PlantPhD/**). The successful candidate will be expected to establish an independent program of extramurally funded research, teach at both the undergraduate and graduate levels, publish in peer-reviewed scientific literature, advise students, and serve on college and university committees. Qualifications include a Ph.D. and postdoctoral experience in a relevant area and a commitment to research and teaching. Starting salary will be commensurate with qualifications and experience; anticipated start date: September 2003. Review of applications will commence January 15, 2003. Applicants should send the following as hard copy and as pdf (or Word or WordPerfect) files on a PC-formatted CD: cover letter, curriculum vitae, a research proposal, and copies of three representative publications. Candidates should also arrange to have three letters of reference sent to: **Dr. Eleanore Wurtzel, Chair, Plant Signaling Search Committee, Department of Biological Sciences, Lehman College, CUNY, 250 Bedford Park Boulevard West, Bronx, NY 10468.**

Lehman College/CUNY is an Equal Employment Opportunity/Affirmative Action/Immigration Reform and Control Act Employer.

POSITIONS OPEN

STANFORD UNIVERSITY
SCHOOL OF MEDICINE
department of GENETICS

Invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. We seek candidates with an interest in teaching and an outstanding record of research achievement in any area of genetics including but not limited to computational biology, pathophysiology of genetic disease, gene therapy, quantitative genetics, and model organism genetics or genomics.

Candidates should have a Ph.D. and/or M.D. degree and postdoctoral research experience. Candidates are encouraged to apply by December 15, 2002, with curriculum vitae; a description of future research plans; and the names and addresses of three references. Please send information to:

Richard Myers, Ph.D.
Professor and Chair
Department of Genetics, M-344
Stanford University School of Medicine
Stanford, CA 94305-5120

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

TENURE-TRACK ASSISTANT PROFESSORS
Immunology and Mammalian Physiology

California State University, Northridge, invites applications for two tenure-track Assistant Professors of biology in immunology and mammalian physiology to begin August 2003. Candidates must hold a Ph.D. in biology or related field and have postdoctoral experience. Teaching includes introductory biology, cell biology, graduate seminars, and either immunology or human physiology. The successful candidates are expected to develop a vigorous research program involving undergraduate and graduate (M.S.) students, seek extramural research funding, demonstrate teaching excellence, and provide effective instruction to students of diverse backgrounds in a multicultural setting.

Applicants should specify the Immunologist or Physiologist position in a letter of application and submit curriculum vitae, summary of teaching experience, statements of teaching philosophy and research interests, three representative publications, and arrange to have three letters of recommendation sent to: **Chair, Department of Biology, California State University, 18111 Nordhoff Street, Northridge, CA 91330-8303**. Complete applications must be received by January 10, 2003.

ENVIRONMENTAL SCIENCE

The Department of Environmental Science at the University of San Francisco (USF) invites applications for a tenure-track **ASSISTANT PROFESSOR** position as an Environmental Scientist or Engineer with expertise in environmental risk assessment or management. Formal areas of training and research may include but are not limited to environmental health or air quality. For details, please see **website: http://www.usfca.edu/hr**. *USF is an Affirmative Action/Equal Opportunity Employer.*

TWO BIOLOGY FACULTY SOUGHT

Buena Vista University, Storm Lake, Iowa, seeks applicants to fill two tenure-track positions in biology beginning fall of 2003. **ASSISTANT PROFESSOR** level is preferred but Associate Professor may be considered. Both faculty will participate in introductory biology courses for majors and nonmajors and conduct research with groups of students in a new $26 million science center scheduled to open fall 2004. See position description for details at **website: http://web.bvu.edu/~hr/jobopenings.asp**.

PRE- and POSTDOCTORAL TRAINING IN MAMMALIAN GENETICS

The Jackson Laboratory, a non-profit research center, provides a unique research environment with unparalleled resources for training in animal models of development and disease.

Areas of expertise include:
Cancer, Developmental Biology, Aging, Genetics of Complex Traits, Genomics, Immunology/Hematology, Metabolic Diseases, Neurobiology, Bioinformatics/ Statistical Genetics, Cryopreservation/ Assisted Reproduction

Letters of application should include: Curriculum vitae, statement of research interests, list of publications, and names of three references. Predoctoral program is in conjunction with the University of Maine and is limited to US citizens or permanent residents.

To apply contact:

Suzanne Serreze
Box 116-S
The Jackson Laboratory
600 Main Street
Bar Harbor, ME 04609
Phone: 207-288-6420
FAX: 207-288-6079
email: sbs@jax.org
(Please reference code "SC" when you apply)
http://www.jax.org

EO/AA Employer

DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL HUMAN GENOME RESEARCH INSTITUTE

Program Director, ELSI Research

The National Human Genome Research Institute (NHGRI) seeks candidates for a Program Director position in the area of the ethical, legal and social implications of genomics. Since its inception, the NHGRI has supported basic and applied research to identify, analyze and address ethical, legal and social issues surrounding human genetics research. This effort has been motivated by the need to understand the most appropriate ways in which to use genomic and genetic information for beneficial purposes and how to minimize the potential risks inherent in the use of genomic and genetic technology by preventing misuse. See **http://www.genome.gov/page.cfm?pageID=10001618**.

Responsibilities will include developing new initiatives, administering a portfolio of research awards, and interacting with researchers and related programs at NHGRI, NIH and other agencies (both public and private, in the U.S. and abroad). Candidates must have a Ph.D., M.D., J.D. or equivalent degree, and research experience that will complement the expertise of the current staff in clinical research and research ethics, law and social policy, and genetics and the humanities. Areas of particular interest include anthropology, health behavior, health economics, intellectual property, non-medical applications of genomics, and sociology. The ability to work both independently and collaboratively as needed is required, as are strong communication, writing, and organizational skills. The position may be filled on a permanent or rotating basis. Salary will be commensurate with experience. Send CV, Bibliography and the names of 4 references by email: **nhgrijobs-r@mail.nih.gov** or FAX: **(301)480-2770** by **January 15, 2003**.

With nationwide responsibility for improving the health and well being of all Americans, the Department of Health and Human Services oversees the biomedical research programs of the National Institutes of Health. **http://www.os.dhhs.gov/**.

HHS and NIH are Equal Opportunity Employers

Trafficking & Signaling Program at the University of New Mexico

Recent graduates in cell biology, biochemistry and/or molecular biology are invited to apply for **postdoctoral positions**. Candidates will join an interactive program in intracellular trafficking & signal transduction. UNM has exceptional facilities for microscopy, flow cytometry, genomics & proteomics. Investigators include:

Dusanka Deretic. Ras & small G-proteins in trafficking of rhodopsin in photoreceptor cells (http://hsc.unm.edu/som/cb&p/DDeretic.html)
Vojo Deretic. Role of Rabs & Rab effectors in phagosome biogenesis; function of TGN & endosomes in cystic fibrosis. (http://hsc.unm.edu/som/micro/vojo.html)
Kim Leslie. EGFR trafficking in endometrial cancer
Janet Oliver. Signaling & intracellular trafficking of IgE receptors. (http://cellpath.unm.edu/oliver.html)
Eric Prossnitz. Signaling & internalization of GPCRs (http://hsc/som/cb&p/Prossnitz.html)
Angela Wandinger-Ness. Rab GTPases & associated proteins in membrane trafficking (http://www.unm.edu/~moltra)
Bridget Wilson. Calcium & mast cell secretion; signaling microdomains. (http://cellpath.unm.edu/wilsonlab.htm)
Michael Wilson. Vesicle trafficking for neurotransmitter release & nervous system development. (http://www.unm.edu/~neurohsc/wilson.htm)

Send CV with names of 3 references to: Lourdes Garcia-O'Keefe, Cancer Research Facility, Rm 201, UNM Health Sciences Center, Albuquerque, N.M. 87131 or e-mail to lgarcia-okeefe@salud.unm.edu. *AA/Equal Opportunity Employer.*

MAYO CLINIC

Hematologist Oncologist
Rochester, Minnesota

The Department of Hematology and Internal Medicine is seeking a **BC/BE Hematologist Oncologist** with laboratory-based research experience related to multiple myeloma, with particular focus on bone marrow microenvironment and bone marrow angiogenesis. Laboratory experience in the use of replicating viral vectors for cancer therapy is desirable. The applicant must be experienced in clinical trial design and conduct and in the care of patients with multiple myeloma and amyloidosis. The individual should have a proven track record in blood and marrow transplantation related research. Formal training in clinical research is a requisite.

Salary will be determined by the successful candidate's experience. There is an attractive benefits package. Mayo Clinic Rochester is a non-profit, physician led, clinical practice integrated with education and research in a unified multi-campus system.

Submit curriculum vitae and copies of first authored publications to:

Dr M.A. Gertz
Department of Hematology and Internal Medicine
Mayo Clinic
200 First Street SW
Rochester, MN 55905

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

POSITIONS OPEN

Drexel University College of Medicine
In the tradition of Woman's Medical College of Pennsylvania and Hahnemann Medical College

MACROMOLECULAR CRYSTALLOGRAPHY

The Department of Biochemistry of the Drexel University College of Medicine invites applications for a tenure-track faculty position at the level of **ASSISTANT PROFESSOR** to begin fall 2003. Preference will be given to candidates who use X-ray crystallography to investigate important biochemical processes at the molecular level; candidates using crystallography in conjunction with other approaches are encouraged to apply. The Department of Biochemistry is conveniently located in Center City Philadelphia, Pennsylvania, and offers a collegial and stimulating environment with many opportunities for collaboration. A state-of-the-art crystallographic laboratory has recently been established and generous start-up funds are available. Successful candidates will have a Ph.D. and/or M.D., relevant postdoctoral experience, and a strong record of research accomplishments. Faculty are expected to establish vigorous, independent, and well-funded research programs and to participate in graduate and medical education. To apply, submit curriculum vitae, statement of research interests, and names of three references to:

Dr. Patrick Loll
Structural Biology Search Committee
Drexel University College of Medicine
Department of Biochemistry, Mail Stop 497
245 North 15th Street
Philadelphia, PA 19102-1192
E-mail: pat.loll@drexel.edu
Website: http://www.drexel.edu/med.biochemistry

ASSISTANT PROFESSOR OF BIOCHEMISTRY
University of Massachusetts Dartmouth

Applications are invited for a tenure-track Assistant Professor of Biochemistry position in the Department of Chemistry and Biochemistry at the University of Massachusetts Dartmouth. Appointment requires a Ph.D. in chemistry or biochemistry with postdoctoral experience preferred. Responsibilities include graduate and undergraduate teaching, developing an externally funded research program, and participating in Ph.D. programs within the University of Massachusetts system. Please send curriculum vitae, statement of research plans, teaching philosophy, graduate transcript, copies of relevant publications, and three letters of recommendation to: **Biochemistry Search, Office of Human Resources, University of Massachusetts Dartmouth, 285 Old Westport Road, North Dartmouth, MA 02747**. Review of applications will begin January 31, 2003, and continue until the position is filled. University of Massachusetts Dartmouth is located on the coast, one hour south of Boston, Massachusetts; it is midway between Providence, Rhode Island, and Cape Cod, Massachusetts. **Website: http://www.umassd.edu/Chemistry**. *UMD is an Affirmative Action/Equal Opportunity Employer.*

MICROBIOLOGY ASSISTANT PROFESSOR: full-time, tenure-track position beginning August 2003. The University of Wisconsin–River Falls Biology Department seeks a person committed to undergraduate teaching and research. Teaching responsibilities include lecture and laboratory courses in general microbiology, introductory biology, and other courses depending on applicant's area of specialization. An active research program involving undergraduates is required. Ph.D. in microbiology or related area; postdoctoral experience preferred. For full position announcement and application procedure, visit **website: http://www.uwrf.edu/biology**. Applications should be sent to: **Dr. Kim Mogen, Recruitment Committee Chair, Biology Department, University of Wisconsin–River Falls, 410 South Third Street, River Falls, WI 54022**. Review of applications begins January 17, 2003.

POSITIONS OPEN

FACULTY POSITION IN COMPUTATIONAL BIOLOGY
Department of Electrical Engineering and Computer Science and Biological Engineering Division
Massachussetts Institute of Technology (MIT)

The MIT School of Engineering is continuing to build leadership teaching and research programs in computational biology across a broad range of important new areas. Accordingly, the Biological Engineering Division (BE) and Department of Electrical Engineering and Computer Science (EECS) seek to jointly hire an outstanding faculty member. We seek excellence in research accomplishment and potential and are particularly interested in computational approaches to addressing biological problems in the emerging postgenomic era for molecular network information from the gene and protein level to the physiomic level. The successful candidate should demonstrate evidence of leadership potential in research and teaching, combining expertise in both biology and computer science. Teaching efforts will be shared between BE and EECS, and research opportunities will be available across a wide spectrum of MIT interdisciplinary centers and laboratories.

Applicants should submit curriculum vitae and research/teaching summary along with suggested references to: **Professor D. A. Lauffenburger, Co-Director, Biological Engineering Division, MIT, Building 56, Room 341, 77 Massachusetts Avenue, Cambridge, MA 02139-4307**. Review of applications will begin in January 2003. *Equal Opportunity Employer.*

ASSISTANT PROFESSOR MOLECULAR AND CELL BIOLOGY
University of Pennsylvania

The Department of Animal Biology at the University of Pennsylvania is soliciting applications for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level. The Department has a strong commitment to basic biomedical research and is located at the heart of Penn's Philadelphia campus in an interactive scientific environment. Outstanding candidates with research interests in the broad areas of cell and molecular biology are encouraged to apply. We are particularly interested in Scientists investigating basic cell processes as they relate to stem cell biology, metabolic regulation, oncogenesis, and infection. Applicants must have a Ph.D., M.D., V.M.D., or equivalent degree along with postdoctoral training and should be prepared to establish an independent, extramurally funded research program and to interact with existing research centers at Penn. Applicants are expected to participate in teaching in the Department and in Universitywide graduate programs. Interested candidates should submit curriculum vitae, a statement of research interests, and three letters of reference to: **Ms. Judy Bennett, Search Committee Coordinator, University of Pennsylvania School of Veterinary Medicine, 3800 Spruce Street, Philadelphia, PA 19104-6046. FAX: 215-573-6810; e-mail: jbennett@vet.upenn.edu**. Deadline for applications is January 31, 2003. *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE POSITION
Molecular Physiology
Johns Hopkins University School of Medicine

Ph.D. with molecular biology experience required to study molecular physiology of Na/H antiporters and their regulation involving PDZ domain proteins. Two gene families that we have molecularly identified are studied to understand how regulation of Na/H exchange occurs via large plasma membrane complexes. The job is to oversee the laboratory and direct a project that uses mutagenesis/confocal microscopy/proteomics. Submit curriculum vitae and three references to: **Mark Donowitz, M.D., Johns Hopkins University School of Medicine, 925 Ross Research Building, 720 Rutland Avenue, Baltimore, MD 21205-2195. E-mail: mdonowit@jhmi.edu; Telephone: 410-955-9675; FAX: 410-955-9677.**

POSITIONS OPEN

University of Miami
SCHOOL OF MEDICINE

SENIOR DEVELOPMENTAL NEUROBIOLOGIST
The University of Miami

The Department of Biology invites applications from established Developmental Neurobiologists for a faculty position at the **ASSOCIATE PROFESSOR** or **PROFESSOR** level. The Department of Biology is described at **website: http://www.bio.miami.edu/**. The University of Miami also has a nationally ranked Neuroscience Program with graduate and undergraduate components described at **website: http://chroma.med.miami.edu/neuro/**.

In addition to a Ph.D. or equivalent degree and a recognized and productive research program (as indicated by substantial national grant funding), the successful applicant is expected to have had teaching experience at the graduate or undergraduate level and, in addition, teaching interests that include both developmental biology and neurobiology as well as enthusiasm for a leadership role in our undergraduate neuroscience major. Applications will be reviewed beginning 30 January 2003. Applicants should send a statement of research interests, curriculum vitae, representative publications, and either the names of three references or arrange to have three reference letters sent to: **Dr. David Wilson, Search Committee Chair, Department of Biology, University of Miami, P.O. Box 249118, Coral Gables, FL 33124. E-mail: williams@bio.miami.edu, Attention: Staff Assistant.** Salary is competitive and commensurate with experience.

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

The Division of Paleontology at the American Museum of Natural History is seeking outstanding candidates for a senior- or midcareer-level position at the **ASSOCIATE** or **FULL CURATORIAL** rank in mammalian paleontology. A high level of research productivity and a record of competitive grantsmanship is essential. Candidates with expertise in systematics, stratigraphy, anatomy, faunal evolution, development, and biogeography as these relate to fossil mammals will be considered. In addition, competitive applicants should show an accomplished record of field and expedition work. Sponsorship and training of graduate students and Postdoctoral Fellows is also expected. Candidates with administrative experience that may qualify them for important administrative roles in the institution will be given special consideration. Please send curriculum vitae; statement of research; and three letters of recommendation to: **Mark Norell, Division of Paleontology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192** by January 5, 2003. *Equal Opportunity Employer.*

The Department of Mechanical Engineering, University of California at Berkeley, seeks applications for a tenure-track **ASSISTANT PROFESSOR** position in the area of micro- and nanoengineering. Specific areas may include but are not limited to manufacturing and integration, devices and systems, and/or theory/computation/design. Applicants must hold a Doctorate and should apply in writing by submitting a résumé; statement of research and teaching interests; one copy of each significant publication; and names, addresses and telephone numbers of five professional references to: **Search Committee, Micro- and Nanoengineering, I.D. Number 728, c/o Chairman, Department of Mechanical Engineering, MC Number 1740, University of California, Berkeley, CA 94720-1740**. Only applications postmarked by February 14, 2003, will be considered. Appointment is subject to budgetary approval. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

CENTER FOR MOLECULAR NEUROBIOLOGY HAMBURG

The Center for Molecular Neurobiology Hamburg invites applications for a:

Postdoctoral Position
-German University scale BAT IIa-

For a project studying protein-protein interactions, which underlie the trafficking of synaptic proteins, we will apply protein chemistry as well as neuronal cell culture and transgenic mouse techniques, combined with optical imaging.

Candidates with a strong background in neurobiology are encouraged to apply. The position will be available for a period up to five years.

The aim of the University of Hamburg is to increase the number of female scientists who are encouraged to apply. Disabled candidates with equal qualifications are preferred.

Interested applicants should send a letter of application, curriculum vitae with the names and addresses of two referees to:

Dr. Matthias Kneussel, Center for Molecular Neurobiology ZMNH
University of Hamburg, Falkenried 94
D-20251 Hamburg

Further information available at: matthias.kneussel@zmnh.uni-hamburg.de and http://www.zmnh.uni-hamburg.de

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Department of Health and Human Services
National Institutes of Health
National Institute of Environmental Health Sciences

Chief, Laboratory of Computational Biology and Risk Analysis

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

The National Institute of Environmental Health Sciences (http://www.niehs.nih.gov), a major research component of NIH and the Department of Health and Human Services, is recruiting a senior tenured investigator to direct the Laboratory of Computational Biology and Risk Analysis (LCBRA) within the Environmental Toxicology Program, Division of Intramural Research.

The Challenge

To develop and maintain a strong personal research effort in the general area of bioinformatics, particularly as it relates to biological networks, proteomics and genomics.

To provide overall leadership for the existing principle investigators within the LCBRA who study the combined development of laboratory methods for humans and animals with computational, statistical and mathematical methods to further our understanding of the mechanisms underlying environmental disease.

To recruit talented investigators to the LCBRA and provide a focus for collaborations within the NIEHS.

The Opportunity exists for an outstanding senior scientist to establish a cutting edge intramural research program in bioinformatics, and to direct and expand the efforts of the LCBRA in an era of rapid mechanistic and molecular evolution in toxicology.

The Candidate should be a senior investigator with an international reputation in a specific area within the broad context of bioinformatics and its relationship to the environment. Possible research areas include but are not limited to mathematics, statistics, genetics, bioengineering and molecular biology. The successful candidate will have an outstanding publication record and proven history of research leadership, and an M.D., Ph.D. or equivalent.

Salary and level of appointment will be commensurate with experience and qualifications of the candidate. A full Civil Service package of benefits (including retirement, health, life and long term care insurance, Thrift Savings Plan participation, etc.) is available.

For further information, contact Dr. Christopher Portier, Director, Environmental Toxicology Program, at 919-541-3802 (portier@niehs.nih.gov), or Dr. Clarice Weinberg, Search Committee Chair, at 919-541-4927 (weinberg@niehs.nih.gov). Applications from women and members of minority groups are particularly welcome. Interested persons should submit a curriculum vitae and list of publications, plan for future research, and the names of three individuals who could write reference letters on the candidate's behalf to the following address by February 14, 2003.

Ms. Tammy Locklear (Vacancy HNV03-06)
Human Resources Operations Branch E (NIEHS)
P.O. Box 12233, Maildrop NH-01
Research Triangle Park, NC 27709
919-541-3317 e-mail: locklea1@niehs.nih.gov

DHHS and NIH are Equal Opportunity Employers

NIMH
National Institute of Mental Health

Department of Health and Human Services
National Institutes of Health
National Institute of Mental Health

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

The Experimental Pathophysiology and Treatment Branch of the Mood and Anxiety Disorders Research Program has an opening for a Senior Research Fellow beginning in **June, 2003**. This position provides a unique opportunity for innovative pathophysiology and treatment discovery research in serious mood and anxiety disorders involving brain imaging (PET, MRI, MEG, MRS), neuroendocrinology, neurochemistry, molecular genetics, and novel therapeutic approaches. The NIMH research environment facilitates a collaborative multidisciplinary approach to these complex disorders. Applicants must have a M.D. or Ph.D. with at least five years of relevant research experience. This position is located within NIMH Intramural Research Program. Please send CV and three letters of reference to:

Dennis S. Charney, M.D.
Chief, Mood and Anxiety Disorders Research Program
National Institutes of Mental Health
Bldg. 15K, Room 101
Bethesda, MD 20892-2670
Charneyd@nih.gov

DHHS and NIH are Equal Opportunity Employers

BIOTECHNOLOGY APPLERA CORPORATION

At Applera Corporation, including Applied Biosystems, Celera Diagnostics, Celera Genomics, Perceptive, and Paracel, we're committed to ensuring that biological information plays a pivotal role in the future of medicine and the well-being of humankind. From genomic information to instrument systems, we enable science for life. We are currently recruiting at all levels for the following positions in various locations including Foster City, San Jose, South San Francisco, Alameda, Pasadena, and Pleasanton, CA; Santa Fe, NM; Houston, TX; Boston, Bedford, Framingham, MA; and Rockville, MD.

- **SCIENTISTS, CHEMISTS, ENGINEERS, SOFTWARE ENGINEERS, RESEARCH ASSOCIATES, SYSTEM ARCHITECTS, DATABASE TECHNOLOGISTS:** DNA sequencing projects, research, development, QA, test, genetic analysis, bioinformatics, and molecular microbiology.
- **WORKSTATION ENGINEERS**
- **SCIENTIFIC OPERATIONS MANAGERS**
- **SCIENTISTS MANAGERS**
- **SPECIAL PROJECTS MANAGERS**
- **DESIGN SPECIALISTS (Data Warehousing; Info-Technology)**
- **ASSOCIATE PRODUCT MANAGERS**
- **SALES ENGINEERS**
- **FIELD SUPPORT & FIELD SERVICE ENGINEERS**
- **SOFTWARE MARKETING SPECIALISTS**
- **SERVICE TRAINING SPECIALISTS**
- **PRODUCT APPLICATIONS SPECIALISTS (Protemics and Mass Spectrometry)**
- **FIELD APPLICATIONS SPECIALISTS**
- **MASS SPECTROMETRY SALES & SERVICE SPECIALISTS** Sales and market development for protein analysis instrumentation products.
- **SYSTEMS ANALYSTS, SR. ANALYSTS (Business Finance, IT, HR)**
- **SAP DESIGN SPECIALIST, NETWORK SYSTEMS**

Regional positions: Illinois, Missouri and Midwestern States; Colorado and Rocky Mountain States; California and Western States, Texas and the Southwestern States; North Carolina and Eastern States; Massachusetts, Maryland and Northeastern States

Interested candidates should send their resumes to: **Applera Corporation, Human Resources Department, 850 Lincoln Centre Drive, Foster City, CA 94404. FAX: 650-638-6738.** For more information on these and other career opportunities, visit our website: **www.abcareers.com.** Applera Corporation is an Equal Opportunity Employer and welcomes diversity in the workplace.

POSITIONS OPEN

INVERTEBRATE BIOLOGY

The Department of Biology at Wilkes University invites applications for a **VISITING PROFESSOR** of invertebrate biology starting August 2003 with possibility of renewal for four years. Depending on budgetary constraints, the position may convert to tenure track; the position is subject to final budgetary approval. We seek an individual who is dedicated to innovative teaching in an undergraduate setting and who has expertise in one or more of the following areas: physiology, developmental biology, genetics, or population ecology. Responsibilities will include participation in our general biology sequence for science majors and the development of upper-level electives in area of specialization. Ph.D. and commitment to teaching excellence required. Development of an active research program involving undergraduates is encouraged. Preference will be given to individuals with postdoctoral experience and strong interpersonal skills. Applicants should provide curriculum vitae, statements of teaching and research goals, reprints, and three letters of recommendation to: **Dr. M.Steele, Chair, Division of Biology, Chemistry, and Health Sciences, Wilkes University, Wilkes Barre, PA 18766. E-mail: msteele@wilkes.edu.** Deadline for applications is December 31, 2002. *Wilkes University is an Equal Opportunity/Affirmative Action Employer committed to a diverse faculty, staff, and student body. Women and minority candidates are strongly encouraged to apply.*

STONY BROOK UNIVERSITY

The Center for Biotechnology in collaboration with the Department of Biomedical Engineering invites applications for a **TENURE-TRACK POSITION** in the area of functional genomics. Successful candidates should possess a Ph.D. in the biological, bioinformatic, or bioengineering sciences with a minimum of two years of postdoctoral experience. Candidates with pharmaceutical or biotechnology industry experience are encouraged to apply. This faculty member will work with a group that is developing computational and microarray-based methods to study the mechanism, prevalence, and regulation of genes and the relationship to human disease. The successful candidate will be responsible for catalyzing innovative functional genomics research activities and coordinating them with our academic and industry collaborators. Successful candidates are expected to maintain competitive, extramurally funded research programs and to excel in automation and technology development. Submit a complete application including curriculum vitae, statement of research interests, and names of three people who will serve as references to: **Anil Dhundale, Chair, Functional Genomics Search Committee, Center for Biotechnology, Stony Brook University, Stony Brook, NY 11794-2580. E-mail: anil.dhundale@sunysb.edu.** Visit us at **website: http://www.stonybrook.edu/cjo** for more details. *Affirmative Action/Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR (TENURE TRACK)
Comparative Biomedical Sciences

Required qualifications: Ph.D. or equivalent degree in biological/biomedical sciences or related field, postdoctoral experience, research background in cell/molecular biology, ability to teach in a team-taught course in the professional curriculum, have or will have extramural funding. Responsibilities: Establishes and maintains an extramurally funded research program; teaches in the professional curriculum and in a graduate course. Salary and rank will be commensurate with qualifications. Application deadline is January 10, 2003, or until candidate is selected. Submit letter of application and résumé (including e-mail address) to: **Gary E. Wise, Ph.D., Professor and Head, Comparative Biomedical Sciences, Lousiana State University, Reference Number 014396, Baton Rouge, LA 70803. Telephone: 225-578-9889.**

Louisiana State University is an Equal Opportunity/Equal Access Employer.

POSITIONS OPEN

FACULTY POSITIONS OPEN

The Department of Pharmaceutical Sciences is seeking applications for a tenure-track position at the **ASSISTANT/ASSOCIATE PROFESSOR** level. Applicants must possess an earned Ph.D. and postdoctoral experience in biomedical sciences. Responsibilities include teaching undergraduate courses in pharmacology/toxicology, graduate courses in area of specialty, establishment of an active research program, and mentoring graduate students. The Department possesses excellent facilities and support service for research. Modern instrumentation, AAALAC-accredited facility, and tissue culture laboratories are available. Application letters with curriculum vitae, statement of research interests, and three letters of reference should be sent to: **Dr. Louis Trombetta, Professor and Chair, College of Pharmacy and Allied Health Professions, Department of Pharmaceutical Sciences, St. John's University, 8000 Utopia Parkway, Jamaica, NY 11439. E-mail: trombetl@stjohns.edu.** *St. John's University is an Equal Opportunity Employer and encourages applications from women and minorities.*

THE CENTER FOR HIGH-TECHNOLOGY MATERIALS (CHTM)
University of New Mexico

The Center for High-Technology Materials (CHTM) invites applications for a **TENURED/TENURE-TRACK FACULTY** position. CHTM is a research center with an emphasis on interdisciplinary and collaborative programs. Strengths are in optoelectronic materials, devices and systems, and in nanoscience; further development of programs in optical systems or nanotechnology is sought.

Candidates will be considered at all levels but senior applicants interested in leading a team in a collaborative environment are particularly encouraged. The tenured/tenure-track faculty appointment is possible in any of several academic departments including Electrical Engineering, Physics and Astronomy, Chemical and Nuclear Engineering, Mechanical Engineering, Chemistry, or Biology.

The minimum qualification is an earned Ph.D. in engineering or the physical sciences. Salary and rank will be commensurate with the applicant's qualifications and experience. Senior candidates must demonstrate an outstanding record of research excellence and relevant leadership and a commitment to teaching at the undergraduate and graduate levels. University-level teaching experience is desirable. Junior candidates must demonstrate the potential to establish a high-quality research program and to become an effective teacher and mentor.

CHTM maintains internationally recognized programs in optoelectronics, microelectronics, lightwave technology, and nanotechnology that span from nanoscale materials growth and synthesis, characterization, fabrication, and manufacturing to devices and systems. Extensive MOCVD, MBE, lithographic, and cleanroom facilities are complemented by several nanoscience laboratories.

Applicants must send a signed personal statement/letter of vision, comprehensive résumé, and the names of four references to the following address:

Professor Kevin J. Malloy
Search Committee Chair
CHTM, University of New Mexico
1313 Goddard Street, S.E.
Albuquerque, NM 87106-4343

Screening of applications will begin on December 9, 2002. The position will remain open until filled. Further background information is available at **websites: http://www.chtm.unm.edu** and **http://www.unm.edu.** *The University of New Mexico, a Carnegie Doctoral/Research Intensive university, is an Equal Opportunity/Affirmative Action Employer and Educator.*

POSITIONS OPEN

TWO BIOLOGY FACULTY POSITIONS

Northern Michigan University invites applications to fill two faculty positions at the level of **ASSISTANT PROFESSOR** in biology beginning August 2003. The positions require a Ph.D. and are tenure-track. Preference will be given to individuals with demonstrated teaching experience. Successful applicants will be expected to establish an active research program involving undergraduate and graduate students.

MOLECULAR ECOLOGIST: Ecologist with expertise in population genetics and molecular biology whose research will focus on local species. Teaching responsibilities include introductory cell/molecular biology, conservation biology, ecology, and introductory biology. Other teaching duties may include evolution, population genetics, and courses in area of specialization.

MICROBIOLOGIST: Microbiologist with expertise in medical microbiology and immunology. Preference given to individuals whose research emphasizes some aspect of human health in keeping with our department's preprofessional health-related programs. Teaching responsibilities include medical microbiology, immunology, virology, and introductory biology and may include courses in area of specialization.

Application review begins February 3, 2003, and continues until the positions are filled. Send curriculum vitae; statement of teaching and research philosophy; and names, addresses, telephone numbers, and e-mail addresses of three references to: **Chair, Microbiologist** or **Molecular Ecologist Search Committee, Department of Biology, 1401 Presque Isle Avenue, Marquette, MI 49855-5341. Telephone: 906-227-2310; e-mail biology@nmu.edu; website: http://www.nmu.edu/biology.**

Northern Michigan University is an Affirmative Action/Equal Opportunity Employer and is strongly committed to increasing the diversity of its faculty.

ENDOWED PROFESSORSHIP
Bioinformatics and Computational Molecular Biology

The University of Georgia (UGA) invites applications for an Endowed Professorship in the Department of Biochemistry and Molecular Biology. The successful applicant will be expected to establish a research program firmly grounded in the biology of important systems by generating genomic/functional genomic data and/or employing the mathematical/computational skills needed to tap data emerging from genomic and postgenomic initiatives and to participate in teaching related to these areas. Strong programs exist in areas such as biochemistry, genetics, molecular/cell biology, structural genomics/biology, computational chemistry, and computer science at UGA (**website: http://www.uga.edu**). The appointee will play an important role in developing a synergy among these programs and in providing a focal point for coordination of statewide bioinformatics efforts. Applicants should hold a Ph.D. or comparable degree and have an internationally recognized research program in an appropriate area. Please send curriculum vitae, a list of references, and a short description of future research plans to: **Dr. Michael W.W. Adams, Search Committee Chair, Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA 30602.** Applications should be received by December 20, 2002, with an anticipated start date on or after July 1, 2003. *UGA is an Equal Employment Opportunity/Affirmative Action Institution.*

MICROBIOLOGY. The Department of Biology at the University of San Francisco invites applications for a tenure-track position (pending approval) at the **ASSISTANT PROFESSOR** level beginning August 2003 to teach upper-division courses in microbiology, participate in lower-division courses for majors and nonmajors, and establish a research program in the biology of microorganisms that applies molecular approaches. For details, please see **website: http://www.usfca.edu/hr.** *University of San Francisco is an Affirmative Action/Equal Opportunity Employer.*

THE UNIVERSITY of WISCONSIN MADISON

SCHOOL OF PHARMACY DEAN

The University of Wisconsin-Madison invites applications and nominations for the position of dean of the School of Pharmacy.

The dean, who reports to the chancellor and the provost, serves as the chief academic and executive officer of the school with responsibility for faculty and staff development, personnel oversight, budget planning and management, research, curriculum, student academic affairs, and fund raising. The school, housed in its new state-of-the-art facility, Rennebohm Hall, has an annual budget of approximately $15 million and is comprised of 110 faculty and staff, 525 professional and undergraduate students, and 100 doctoral and postdoctoral students.

Please see the following web site for more information:
http://www.ohr.wisc.edu/pvl/pv_043454.html.

Candidates must possess a record of scholarship, teaching, and service that qualifies them for tenure at the level of full professor at UW-Madison.

Applications and nominations must be received by **15 January 2003** to ensure consideration. Later applications and nominations may also be considered. Submit applications and nominations to:

Professor Daniel Rich, Chair
School of Pharmacy Dean Search and Screen Committee
133 Bascom Hall, 500 Lincoln Drive
Madison, WI 53706-1380

608-262-1677; Confidential FAX: 608 265-7806

The University of Wisconsin-Madison is an Equal Opportunity, Affirmative Action Employer.

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

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

The National Heart, Lung, and Blood Institute, a major component of the NIH and the DHHS is recruiting for a **Staff Scientist** within the Vascular Biology Section of the Cardiovascular Branch to join a group of investigators examining the molecular biology and genetics of vascular diseases. The candidate should have a MD or PhD with experience in molecular and cellular biology and molecular genetics. Expertise in cardiovascular diseases is preferred but not required.

The focus of the research is the investigation of the molecular pathogenesis of vascular diseases. Specific areas of focus include: the regulation of vascular cell proliferation by cell cycle proteins, developmental biology of the vasculature, and molecular genetics of vascular diseases using candidate gene approaches. The candidate will also be responsible for managing scientific experimentation and training of junior scientists in the laboratory.

Salary is commensurate with research experience and accomplishments, and a full Civil Service package of benefits (including retirement, health, life and long term care insurance, Thrift Savings Plan participation, etc.) is available.

Applicants should send a CV, a brief statement of research interests, and the name of three references to:

Don Ouellette
National Heart, Lung, and Blood Institute
National Institutes of Health
Building 31, Room 5A28, MSC 2484
Bethesda, MD 20892-2484

Applications must be postmarked by **February 3, 2003.** Please reference announcement **# HL-02-0142** on all application materials.

DHHS and NIH are Equal Opportunity Employers

Mirus

Gene Transfer Specialists™

Mirus Corporation - (Madison, WI) is a recognized world leader in the development of non-viral nucleic acid and drug delivery technologies for both *in vitro* and *in vivo* applications. The Company's state-of-the-art products include: *Trans*IT nucleic acid transfection reagents and *Label* IT nucleic acid labeling reagents. Mirus Corporation is seeking candidates to join its Research and Product Development teams in the following capacities:

Microarray applications: The ideal candidate will have extensive experience working with microarrays and DNA chip technologies and a thorough understanding of the microarray field. A Ph.D. in biochemistry, chemistry, or molecular biology with industrial experience is preferred and primary duties will include commercialization of Mirus' microarray related technologies, corporate presentations, product development, and interfacing with other Mirus scientific groups.

Senior Scientist-Liver Gene Therapy: This candidate will have a Ph.D. or M.D. degree with relevant laboratory experience and knowledge of cancer biology, immunology, gene delivery and gene therapy. Experience with animal cancer and infectious disease models is preferred.

Transfection Reagent Development: Seeking Ph.D, M.S., and B.S. level candidates to direct and/or support the development of new and innovative technologies for delivering nucleic acids into cells *in vitro*. Ideal candidates will have a thorough understanding of the gene delivery process and extensive experience in transfection and cell biology related technologies.

Positions include competitive annual salary, paid vacation and sick leave, 401K plan, health and dental insurance, long-term disability, and life insurance. Please forward a cover letter and a resume detailing your experience to **employment@genetransfer.com** or fax to **608-441-2849**.

DANA-FARBER CANCER INSTITUTE

Postdoctoral Training Opportunities in Cancer Immunology

The Dana-Farber Cancer Institute seeks to fill postdoctoral training positions for research in the area of cancer immunology. U.S. citizens and permanent residents are invited to apply for positions in the Post-Doctoral Training Program in Cancer Immunology. Background and/or experience in the biochemical, genetic and cellular techniques involved in murine T-cell research is preferred. M.D., Ph.D. and M.D./Ph.D. candidates must commit to a minimum two-year training period. A joint appointment will be held in an appropriate department of the Harvard Medical School.

Please forward a CV to:

Harvey Cantor, Director
Dana-Farber Cancer Institute
44 Binney Street, Sm 722
Boston, MA 02115

Or to: Alison_Angel@dfci.harvard.edu

DFCI is an Equal Opportunity Employer.
Women and minorities are encouraged to apply.

POSITIONS OPEN

FACULTY POSITION
Department of Biological Sciences
University of Alabama–Huntsville (UAH)

The Department of Biological Sciences invites applications for a tenure-track faculty position as an **ASSISTANT** or **ASSOCIATE PROFESSOR** to begin August 2003. We seek a Biologist who will contribute to the research strength of the Department and have a commitment to excellence in undergraduate and graduate education. The successful candidate is expected to maintain a productive, externally funded research program and to teach in our anatomy and physiology courses. The new faculty member might also teach in other core curriculum courses and develop a course in an area of expertise. UAH is one of three universities in the University of Alabama system. The UAH campus is located in Huntsville, Alabama, home to NASA's Marshall Space Flight Center and numerous high-technology corporations. Huntsville is a midsize cosmopolitan community with one of the highest per capita incomes in the Southeast. Our department offers Bachelor and Master of Science degrees as well as an interdisciplinary Ph.D. degree in biotechnology. Please send curriculum vitae along with a statement of research interests and teaching philosophy to: **Search Committee Chair, Department of Biological Sciences, 142 Wilson Hall, University of Alabama in Huntsville, Huntsville, AL 35899** or e-mail your application to **e-mail: podilag@email.uah.edu**. Include the names, addresses, and telephone/e-mail contact information for three references. Consideration of completed applications will begin on December 16, 2002. For more information about our department and degree programs, please visit **website: http://www.uah.edu/biology/**. *UAH is an Affirmative Action/Equal Opportunity Employer.*

MOLECULAR CARDIOLOGY
Evanston Northwestern Healthcare

SECTION CHIEF, MOLECULAR CARDIOLOGY: Board certified/Board eligible; M.D./D.O. Full-time, tenure-track position is available at Evanston Northwestern Healthcare (ENH), a major affiliate of The Feinberg School of Medicine of Northwestern University (FSM). ENH is seeking a Section Chief with an established record in clinical and research-oriented molecular cardiology. Candidate must be eligible for a faculty appointment as an **ASSOCIATE PROFESSOR** on a tenure track. Highly competitive salary and benefit package offered. Anticipated starting date: July 1, 2003. Send curriculum vitae and reply by March 1, 2003, to: **Timothy A. Sanborn, M.D., Head, Division of Cardiology, Evanston Northwestern Healthcare, 2650 Ridge Avenue, Evanston, IL 60201. FAX: 847-570-1865.**

ENH and FSM are Affirmative Action/Equal Opportunity Employers. Women and minorities are encouraged to apply. Hiring is contingent upon eligibility to work in the United States. Search Number P168-03.

FACULTY POSITION IN ZOOLOGY

Applications are invited for a tenure-track **ASSISTANT PROFESSOR** position in the Department of Zoology, University of Manitoba, to develop independent research pertinent to Canada's North. Possible research areas include parasitology, aquatic ecology, biota relative to environmental or climate change issues. Ph.D. and postdoctoral experience in zoology are required. Details of the position and department information can be obtained from **website: http://www.umanitoba.ca/faculties/science/zoology/zoohome.htm**. Please send curriculum vitae; brief statements of research interests; teaching philosophy; and names and addresses of three references by March 1, 2003, to: **Dr. Erwin Huebner, Department of Zoology, University of Manitoba, Winnipeg R3T 2N2 Canada. E-mail: ehuebnr@cc.umanitoba.ca.** *All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. We encourage applications from qualified women and men including members of visible minorities, aboriginal peoples, and persons with disabilities.*

SENIOR LECTURER IN BIOLOGY
Emory University

The Biology Department at Emory University seeks Ph.D. applicants for a nontenure-track position of Senior Lecturer for the fall semester of 2003. The appointment will be made for an initial period of three years with the possbility of renewal for additional five-year periods. The primary responsibility of the position is to administer and direct the Department's introductory biology laboratory program and to participate in the development and implementation of laboratory experiments. Therefore, candidates with broad teaching experience in cell and developmental biology will be favored. It is expected that the Senior Lecturer will contibute to the academic life of the Department and the university through faculty committees and other forms of academic service. Please send curriculum vitae, a detailed statement of your teaching philosophy, and three letters of recommendation to: **Senior Lecturer Search, Department of Biology, Emory University, Atlanta, GA 30322. E-mail: lecturer@biology.emory.edu**. Information on the Biology Department can be obtained from the following **website: http://www.emory.edu/BIOLOGY/**. Evaluation of candidates will begin on January 1, 2003, and will proceed until the position is filled. *Emory is an Affirmative Action/Equal Opportunity Employer and applications from individuals belonging to the recognized minority groups are particularly welcome.*

FACULTY POSITION

The Center for Environmental Diagnostics and Bioremediation (CEDB), University of West Florida, invites applications for a tenure-track **ASSISTANT PROFESSOR** in biogeochemistry with a joint appointment and tenure eligibility in the Department of Biology. The incumbent is expected to develop a strong, externally funded research program; teach courses relevant to the needs of the Department; and engage in professional service. Experience in sediment biogeochemistry with expertise in diagenesis of natural and xenobiotic compounds and interactions with benthic biota would be preferred. Ph.D. in biology or marine sciences and postdoctoral experience are required. Salary will be commensurate with experience. Additional information about the CEDB may be found at **website: http://www.uwf.edu/cedb.** The position is available August 8, 2003. Applications must be received by January 24, 2003. Applicants should submit curriculum vitae, academic transcripts, a statement of research and teaching interests, and three reference letters to: **Dr. Wade H. Jeffrey, CEDB, Building 58, University of West Florida, 11000 University Parkway, Pensacola, FL 32514.** *University of West Florida is an Equal Opportunity/Access/Affirmative Action Employer.*

INTEGRATIVE ORGANISMAL PHYSIOLOGIST
University of North Carolina, Chapel Hill

The University of North Carolina at Chapel Hill invites applications for a tenure-track position at the level of **ASSISTANT PROFESSOR** in the Department of Biology. We particularly encourage applications from individuals who use integrative approaches to understand the physiology and functional diversity of whole organisms of any taxon. The appointment will be effective July 1, 2003. Please submit curriculum vitae, a statement of research and teaching interests, up to three publications, and four letters of recommendation to: **Dr. Ken Lohmann, Chair, Integrative Organismal Physiologist Search Committee, Department of Biology, CB Number 3280 Coker Hall, University of North Carolina, Chapel Hill, NC 27599-3280 U.S.A.** Closing date: open until filled but to receive full consideration, all application materials must be postmarked by January 10, 2003. *The University of North Carolina is an Equal Opportunity/Affirmative Action Employer and strongly encourages applications from women and minorities.*

ASSISTANT/ASSOCIATE PROFESSOR
Biology/Educational Research

Idaho State University (**website: http://www.isu.edu/departments/bios**) invites applications for a tenure-track position with teaching responsibilites in (1) introductory biology, (2) biology teaching methods, and (3) graduate seminars in college biology teaching. We seek candidates with a Doctoral degree in a biological science as well as interest/experience in teacher preparation and conducting research on teaching and learning at the college level. The successful candidate will advise and supervise graduate students conducting research in biological education and will be expected to develop an externally funded research program that complements existing research strengths in the Department. Review of applications will begin 5 January 2003. Send curriculum vitae; statements of teaching and research philosophy, experience, and goals; and contact information for three references to: **Biologist/Educational Researcher Search Committee, Biological Sciences, Idaho State University, Pocatello, ID 83209-8007.** *Idaho State University is an Equal Opportunity Employer.*

LECTURER IN BIOLOGY
Emory University

The Biology Department at Emory University seeks Ph.D. applicants for a nontenure-track position of Lecturer for the fall semester of 2003. The appointment will be made for a period of three years with the possibility of renewal for an additional three years followed by promotion to Senior Lecturer. The primary responsibility of the position is teaching in undergraduate introductory and second-level courses as well as participating in advising students. Expertise is sought in cell biology, developmental biology, and/or neuroscience. It is expected that the Lecturer will contribute to the academic life of the Department and the university through faculty committees and other forms of academic service. Please send curriculum vitae, a detailed statement of your teaching philosophy, and three letters of recommendation to: **Lecturer Search, Department of Biology, Emory University, Atlanta, GA 30322. E-mail: lecturer@biology.emory.edu**. Information on the Biology Department can be obtained from the following **website: http://www.emory.edu/BIOLOGY/**. Evaluation of candidates will begin on January 1, 2003, and will proceed until the position is filled. *Emory is an Affirmative Action/Equal Opportunity Employer and applications from individuals belonging to the recognized minority groups are particularly welcome.*

MOLECULAR GENETICS, Middlebury College, Middlebury, Vermont 05753. The Department of Biology invites applications for an entry-level, tenure-track position beginning September 2003 in the area of eukaryotic molecular genetics. Candidates should be able to teach courses in the area for majors (an introductory course [genetics and evolution] and upper-level courses [human genetics] and in the candidate's field of specialty) and for the general college community and to supervise undergraduate research in molecular genetics. Appointment will be made at the rank of **ASSISTANT PROFESSOR** (Ph.D.). Candidates should have a broad background in biology and should provide evidence of their commitment to excellent teaching and of their scholarly potential. Send letter of application, curriculum vitae, statements of teaching and research interests, undergraduate and graduate transcripts, and a sample of scholarly work. At least three current letters of recommendation, one or more which should speak to teaching ability, should be sent under separate cover to: **Professor Helen Young, Genetics Search Committee, Department of Biology; Telephone: 802-443-2556; FAX: 802-443-2072**. Review of applications will begin January 3, 2003. Further information can be seen at **website: http://www.middlebury.edu/~bio/genetics2002.htm**. *Middlebury College is an Equal Opportunity Employer and it encourages applications from women and members of minority groups.*

WEILL MEDICAL COLLEGE OF CORNELL UNIVERSITY

ANNOUNCES:

The Weill Cornell Program of Excellence in Gene Therapy Scholars Program

The NHLBI/NIH Program of Excellence in Gene Therapy at Weill Medical College of Cornell University invites applications from MD, PhD, or MD/PhD physicians and scientists for **four positions** in a unique two year postgraduate program designed to provide comprehensive training in Genetic Medicine. During the first year, Scholars will receive instruction in the preparation and use of DNA and RNA gene transfer vectors, growth and maintenance of stem cells, regulatory approval, and ethics in Genetic Medicine. During the second year, Scholars will select one area in which to perform a concentrated laboratory or clinical study. To supplement the training program, Scholars will attend lectures and seminars in Genetic Medicine and receive formal evaluations.

The Weill Cornell Program of Excellence in Gene Therapy incorporates state-of-the-art facilities including the Belfer Gene Therapy Core Facility, the Institute of Genetic Medicine at Weill Medical College and the Gene Transfer and Somatic Cell Engineering Facility at the Memorial Sloan-Kettering Cancer Center.

To apply, send your curriculum vitae, a detailed cover letter describing your interest in the program, and the names & contact information for three professional references to:
Administrative Manager, Department of Genetic Medicine
Weill Medical College of Cornell University
1300 York Ave, Box 96, Room W-401,New York, NY 10021
Fax: 212-746-8824 Email: pegt-admin@med.cornell.edu

Application deadline: February 28, 2003
Program start date: July 1, 2003

http://www.med.cornell.edu **EOE/AA/M/F/D/V**

Department of Health and Human Services
National Institutes of Health
National Institute of Environmental Health Sciences

IMMUNOLOGIST, TENURE-TRACK

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

The National Institute of Environmental Health Sciences (NIEHS), a major research component of the NIH and the Department of Health and Human Services, is recruiting a cellular/molecular immunologist in the Laboratory of Pulmonary Pathobiology (LPP). The incumbent will be expected to establish a high-quality independent research program in pulmonary immunology in a laboratory with diverse research interests and backgrounds. Applicants must have a Ph.D. or M.D. degree or equivalent with postdoctoral research experience and a strong publication record. The successful candidate will have research strengths in, but not necessarily limited to, pulmonary biology (such as mechanisms of tolerance, allergy, adaptive and/or innate immune response to respiratory infections, etc). Research experience with mouse modeling is desirable but not mandatory. Excellent start-up funds, salary, and a full Civil Service package of benefits (including retirement, health, life and long term care insurance, Thrift Savings Plan participation, etc.) is available. Selectee will have access to state-of-the-art equipment and research core facilities at the NIEHS. Time before tenure review will depend upon qualifications, but will not exceed 6 years. For additional information about this position, contact Dr. Steven R. Kleeberger, Chief, LPP (kleeber1@niehs.nih.gov). How to Apply: Interested persons should send their curriculum vita with a statement of research interests, and arrange for three letters of recommendation to be sent to the following address by 14 February, 2003. Applications received after that date will be considered as needed until the position is filled.

Ms. Veronica White (Vacancy HNV03-04)
Human Resources Operations Branch E (NIEHS)
P.O. Box 12233, Maildrop NH-01
Research Triangle Park, NC 27709
919-316-4647 e-mail: white7@niehs.nih.gov
DHHS and NIH are Equal Opportunity Employers

ROYAL BOTANIC GARDENS KEW

Royal Botanic Gardens, Kew &
Department of Biological Sciences,
Imperial College London

The Royal Botanic Gardens, Kew is a world-leading institute specialising in plant and fungal diversity, conservation and sustainable use; Imperial College's Department of Biological Sciences is a leading centre of research in ecology and evolution.

Lecturers (2 positions) in Plant or Fungal Sciences

As part of a broader collaborative research initiative, Kew and Imperial College seek to appoint two joint permanent staff members with research interests that span the two institutions. Possible fields include plant and fungal ecology, diversity and evolution, using approaches ranging from fieldwork to molecular biology. We expect one appointment to be based at Kew and the other at Silwood Park Campus (Ascot, Berkshire) of Imperial College (where the Ecology and Evolution section is based), though with both maintaining close links between the two institutions.

Both successful applicants will have a PhD in a relevant subject and a strong research publication record. They will be expected to develop an independent and externally-funded research programme, and to contribute to teaching at undergraduate and postgraduate levels. The appointments will be at lecturer level (starting salary range £29,621 to £33,679 with £2,134 London Weighting if applicable). We will consider candidates who seek part-time positions and/or flexible working agreements.

For further information and application forms contact Dr Julie Bennett, Academic Administrator, Department of Biological Sciences, Imperial College, Sir Alexander Fleming Building, South Kensington Campus, Imperial College Road, London SW7 2AZ (Telephone: 020 7594 5396. Email: julie.bennett@ic.ac.uk).

Closing date: 19 January 2003.

Department of Physics

Senior Research Fellow in Biological Physics

£22,191 pa

A senior research fellowship in theoretical biological physics is available immediately for up to 4.5 years duration, primarily to study sickle hemoglobin fiber aggregates. This may interest theoretical soft matter/polymer physicists.

Further details from http://www.phys.warwick.ac.uk

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 or from www.jobs.ac.uk/jobfiles/AC1621.html Please quote reference number 16/3R/02.

Closing date for applications is 1 February 2003.

UNIVERSITY OF WARWICK

RESEARCH POSITIONS
Basic and Clinical Sciences

The Department of Surgery at the Beth Israel Deaconess Medical Center invites applications for **RESEARCH (POSTDOCTORAL) FELLOWS** and junior faculty positions to participate in basic, translational, and clinical research in the following areas: vascular and cardiovascular biology, transplantation biology and immunobiology, epithelial biology, muscle wasting and metabolism, sepsis and inflammation, neurosurgery and neurooncology, bionutrition and herbal medicine, and urological oncology. Applicants must have a Ph.D. and/or M.D. degree and signficant research training and experience. Successful candidates will have an academic appointment at Harvard Medical School.

Beth Israel Deaconess Medical Center is a leading, internationally recognized academic medical center affiliated with Harvard Medical School and ranks third in the United States among independent research hospitals in sponsored research funding.

Please send letters of application accompanied by curriculum vitae and names of three references to: **Susan J. Hagen, Ph.D., Associate Director, Division of Surgical Research, Beth Israel Deaconess Medical Center, Dana 805, 330 Brookline Avenue, Boston, MA 02215**.

Beth Israel Deaconess Medical Center is an Equal Opportunity Employer that values the strength diversity brings to the workplace.

The Department of Microbiology, University of Hawaii, invites application for a tenure-track, nine-month appointment at the **ASSISTANT PROFESSOR** level. The expected start date is August 1, 2003. We seek a Marine Bacteriologist who will annually teach a challenging upper-division undergraduate course in marine microbiology and every third year teach an advanced topics in marine biology course for a newly formed marine biology. B.S. degree program. In alternate years, the successful candidate will also teach a graduate course in his/her area of specialization. The individual hired is expected to maintain an active research program emphasizing marine microbiology and is expected to secure extramural funds to sustain his/her research program. Minimum qualifications: Doctorate in microbiology or closely related field, postdoctoral experience with publications, and a commitment to teaching. Salary will be commensurate with experience and rank. To apply, send curriculum vitae, statement of research goals, a brief description of teaching experience/philosophy, and names of at least three references to: **Search Committee, Department of Microbiology, University of Hawaii, 2538 The Mall, Snyder Hall 207, Honolulu, HI 96822**. Review of applications will begin in February 2003 and will continue until the position is filled. Applications received after February 2003 may not receive full consideration. *The University of Hawaii is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS to study leukemogenesis. *Seeking U.S. citizens or permanent residents* who are recent Ph.D. recipients. Projects include (1) proteomic approaches to leukemia, identifying components of leukemogenic protein complexes; (2) study of leukemogenic genes using gene transfer into transplanted bone marrow in mice; (3) analysis of a new knockout mouse strain, deficient in a leukemia gene; and (4) cDNA microarray analysis of leukemias. Please send curriculum vitae and names of three references to: **Archibald S. Perkins, M.D., Ph.D., Department of Pathology, Yale University, P.O. Box 208023, New Haven, CT 06520-8023. E-mail: archibald.perkins@yale.edu**.

One **POSTDOCTORAL POSITION** is available immediately in the Department of ORL, University of Oklahoma Health Sciences Center, to study the function of two novel genes and their roles in cancer. Solid background in biochemistry, cell, and/or molecular biology preferred. A cover letter, curriculum vitae, and names of three references should be sent by **e-mail: lurdes-queimado@ouhsc.edu**. *The University of Oklahoma is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

MEDICAL COLLEGE OF WISCONSIN

POSTDOCTORAL POSITION

A Postdoctoral position is available for NIH-funded research in the field of experimental bone marrow transplantation. The project involves the investigation and development of immunotherapeutic approaches to treat multiple myeloma using an established murine model. Studies will also be directed at the translation of these results into the clinical setting in an established patient population. Applicants must have a strong foundation in cellular immunology and molecular biology. Experience working with animals is preferred. Please send curriculum vitae and three references to: **William R. Drobyski, M.D., Blood and Marrow Transplantation Program, 9200 West Wisconsin Avenue, Milwaukee, WI 53226. E-mail: bill@bmt.mcw.edu**.

ENDOWED CHAIR
Evelyn F. McKnight Chair for Brain Research in Memory Loss
Evelyn F. and William L. McKnight Brain Institute of the University of Florida

The University of Florida announces the creation of an Endowed Chair for a Scientist working on mechanisms of age-related changes in memory. Potential areas of research may include studies ranging from molecular to systems approaches. Applicants must have a Ph.D. and/or M.D. degree and evidence of a nationally recognized research program. Laboratory and office space will be provided in the new state-of-the-art Evelyn F. and William L. McKnight Brain Institute Building (**website: http://www.mbi.ufl.edu**.) Salary and academic rank of **ASSOCIATE PROFESSOR** or above for this tenure-track position will be commensurate with experience.

Send curriculum vitae, a statement of research goals, and the names of three references to:

Dr. John M. Petitto
Chair of the Search Committee
McKnight Brain Institute
100 Newell Drive, Box 100015
University of Florida
Gainesville, FL 32610-0015
Telephone: 352-294-0416; FAX: 352-294-0425
E-mail: jpetitto@psych.med.ufl.edu

Applications should be received by February 1, 2003. The anticipated earliest start date is July 1, 2003. *The University of Florida is an Equal Opportunity Employer. Minorities and women are encouraged to apply.*

DUKE UNIVERSITY MEDICAL CENTER

The biophysics and structural biology group in the Department of Cell Biology (**website: http://www.cellbio.duke.edu/**) is now accepting **POSTDOCTORAL** applications. Positions are open in the areas of molecular motors (**S.A. Endow**), bacterial cytoskeleton and extracellular matrix (**H. P. Erickson**), structural biology of muscle contraction (**M. K. Reedy**), and membrane biophysics (**T. J. McIntosh**). Applicants should have a strong background in biophysics or biochemistry. Send résumé, statement of research interests, and names of three references to **e-mail: biophysics@cellbio.duke.edu**.

POSTDOCTORAL POSITION
Center for Cardiovascular Research
Washington University School of Medicine

Position available to study cellular mechanisms of lipotoxicity relevant to diabetes and heart disease. Send curriculum vitae and names of two references (with e-mail/FAX information) to: **Dr. Jean Schaffer, Washington University School of Medicine, 660 South Euclid Avenue, Box 8086, St. Louis, MO 63110. E-mail: jschaff@im.wustl.edu; FAX: 314-362-0186**.

POSITIONS OPEN

FACULTY POSITIONS
Wildlife Biology and Animal Physiology

The Division of Biology at Kansas State University invites applications for tenure-track positions at the **ASSISTANT PROFESSOR** level beginning fall 2003. Strong, extramurally funded research and active participation in undergraduate and graduate teaching are expected for both positions. For the animal physiology position, areas of specific interest that would allow maximally productive interactions with current faculty include immunophysiology, molecular neurophysiology, cellular biology/physiology, physiological ecology, behavioral neuroendocrinology, and ecotoxicology. The successful candidate will annually deliver an animal physiology course. Applicants should have a Ph.D. in biology, biochemistry, or related discipline; postdoctoral experience is required. For the wildlife biology position, the area of research expertise is broadly defined under terrestrial vertebrate ecology or management. A Ph.D. is required and postdoctoral training and teaching experience are desirable. Further information on the Division and the positions can be found at **website: http://www.ksu.edu/biology**. Send comprehensive curriculum vitae, brief statement of research and teaching experience and goals, representative research publications, and have three letters of reference sent to the appropriate Committee Chair: **Dr. David Rintoul, Animal Physiology Search Committee** or **Dr. Walter Dodds, Wildlife Biology Committee, Division of Biology, Ackert Hall, Kansas State University, Manhattan, KS 66506-4901**. Review of applications to begin February 3, 2003, and continue until position is filled. *KSU is an Equal Opportunity Employer and actively seeks diversity among its employees.*

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

W. M. KECK
POSTDOCTORAL FELLOWSHIP
Molecular Systematics and Evolution

The Natural History Museum of Los Angeles County seeks applicants for the W. M. Keck Foundation Postdoctoral Fellowship. The successful candidate will have a Ph.D. in a field appropriate for pursuing research in molecular systematics or evolutionary biology. Experience with molecular techniques is preferable but not required. The salary is $33,000 annually with excellent benefits. The term is one year. To apply, send curriculum vitae; reprints; contact information for three references; and a brief description of the proposed research (including fieldwork) to: **Dr. David Kizirian, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007. E-mail: kizirian@nhm.org.** Applications will be considered until March 15, 2003. *Equal Opportunity Employer.*

GEORG - AUGUST - UNIVERSITÄT GÖTTINGEN
Bereich Humanmedizin
Universitätsklinikum – Medizinische Fakultät

In our research group focused on molecular neurophysiology of the mammalian central nervous system several

Post doc positions

(BAT IIa) and

graduate student positions

(BAT IIa/2 or comparable stipend)

are available. Candidates with a background in either patch clamp recording, microfluorometric imaging or laser scanning microscopy are strongly encouraged to apply. The focus of our research is centered on calcium-dependent signal cascades in mouse models of neurodegenerative diseases like amyotrophic lateral sclerosis, which are investigated by using patch clamp recordings from transgenic mice, imaging techniques, laser scanning microscopy and proteomic analysis.

The University of Göttingen is committed to increasing representation of women and handicapped scientists on its medical faculty and particularly encourages applications from such candidates.

Candidates interested in either one of the advertised positions please contact

Prof. Dr. Bernhard U. Keller, Zentrum Physiologie und Pathophysiologie, Humboldtallee 23, 37073 Göttingen. Tel: 0551 - 39 5921, Fax: 0551 - 39 5923

E-mail: bkeller@neuro-physiol.med.uni-goettingen.de

Department of Health and Human Services Research Opportunities at NIDDK, NIH Nuclear Receptor Biology – Tenured and Tenure Track Positions

The Clinical Endocrinology Branch of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health (NIH) invites applications for tenured and tenure track positions for scientists interested in research involving nuclear receptors and cofactors that regulate gene transcription. Specific areas of research interests include: receptors of the thyroid and steroid hormone families; co-activators and co-receptors; molecular mechanisms of receptor-mediated regulation of gene expression, including developmental processes. Priority will be given to applicants at the Assistant or Associate Professor levels at traditional universities or those finishing their post-doctoral positions. The level of appointment will be commensurate with previous experience. The applicant must have a proven record of accomplishments and will be expected to propose and pursue an independent research program in one of these fields. The position offers unparalleled opportunities for interdisciplinary collaboration, both at the basic research and clinical levels, within NIDDK and throughout NIH.

The Clinical Endocrinology Branch of NIDDK is located on the main intramural campus of the NIH in Bethesda, Maryland, a suburb of Washington, D.C.

Interested applicants should send a Curriculum Vitae and list of pulications, copies of three major publications, a summary of research accomplishments, a plan for future research and three letters of recommendation to **Dr. Gary Felsenfeld, Chair, Search Committee, Laboratory of Molecular Biology, NIDDK, Building 5, Room 212, NIH, Bethesda, MD 20892-0540.**

Closing Date: March 15, 2003

DHHS and NIH are Equal Opportunity Employers

A new Molecular Oncology Unit will open at **Mc Gill University** in June 2003. The Unit will be based at the ***Jewish Hospital*** in **Montreal**, to develop innovative treatment modalities for cancer. The Unit will focus on the targeting of Oncogenic Fusion Proteins causally involved in the process of malignant transformation, with the main aim of identifying new drugs, and of validating them in initial clinical studies. Two post doctoral positions, one technician/research assistant and one grant manager position are presently available.

The **first position** (code #1) is a **Post Doctoral position** related to basic studies of the signal transduction pathways activated by NPM/ALK, an oncogenic fusion gene present in non Hodgkin's lymphomas, or by BCR/ABL. Research experience in molecular biology, signal transduction or protein biochemistry (including baculovirus-based expression systems) is required.

The **second position** (code #2) will be for a **Physician Scientist**, wanting to spend 1-3 years doing Molecular Medicine, with the aim of identifying and overcoming molecular mechanisms mediating resistance to Imatinib in Chronic Myeloid Leukemia. The position could involve clinical duties up to a maximum of 30% of time.

The **third position** (code #3) will be offered to a **Technician/Research Assistant.** This person will be required to have good experience in both molecular (including enzymatic digestions, cloning, mini/maxipreps, Western blot assays, PCR) and cellular biology (including cell culture, FACS analysis, cell freezing and thawing).

The **fourth position** (code #4) available will be for a **Grant Manager**, a person able to support the administrative and scientific management of the Unit. This person will be responsible for finalizing grant applications/reports and for maintaining contacts with grant agencies; she/he will also have some administrative responsibilities. This position is offered on a full-time or part-time basis.

All positions are funded for at least three years.
Interested applicants can send their CV in confidentiality to:

Ms. Angela Fragomene
Lady Davis Institute for Medical Research
Jewish General Hospital, Rm D127
3755 Cote Ste Catherine Rd
H3T 1E2 Montreal, Canada
E-Mail: afragome@ldi.jgh.mcgill.ca

Please indicate clearly on the envelope (or on the subject line of the e-mail) the **code #** related to the position for which the application is being sent.

DANA-FARBER CANCER INSTITUTE

Postdoctoral Training Opportunities in AIDS Research

The Dana-Farber Cancer Institute seeks to fill postdoctoral training positions in the area of AIDS-related research. U.S. citizens and permanent residents are invited to apply for positions in the Post-Doctoral Training Program in AIDS Research. Background and/or experience in the virology, biochemistry, genetics and cellular/molecular biology is preferred. M.D., Ph.D. and M.D./Ph.D. candidates must commit to a minimum two-year training period. A joint appointment will be held in an appropriate department of the Harvard Medical School.

Please forward a CV to:

Harvey Cantor, Director
Dana-Farber Cancer Institute
44 Binney Street, Sm 722
Boston, MA 02115

Or to: Alison_Angel@dfci.harvard.edu

DFCI is an Equal Opportunity Employer.
Women and minorities are encouraged to apply.

POSITIONS OPEN

MICROBIAL SYSTEMATIST

The American Museum of Natural History (AMNH) is seeking a midcareer- to senior-level Scientist to fill a tenure-track position in the field of microbial systematics with emphasis on the use of genomic techniques beginning September 2003. The successful candidate will be appointed at the rank of **ASSOCIATE** or **FULL CURATOR**. Candidates must have an established record of funded research in systematics and/or phylogenetics of microbes using genomic techniques and demonstrate the experience and ability to guide the establishment of a new initiative in microbial research at the AMNH. Areas of taxon research focus can include bacteria, archaea, protistans, or fungi (but not viruses). Applicants must have a strong commitment to the use and continued development of the Ambrose Monell Collection for Molecular and Microbial Research at the American Museum as a complement to their research programs.

Application materials should include curriculum vitae, statement of research interests and goals, copies of publications relevant to the application, and at least three letters of reference from individuals capable of commenting on the capabilities of the candidate. The deadline for submission of application materials is December 20, 2002. Interviews will be condicted by the end of January 2003. Materials should be sent to: **Chair, Microbial Systematist Search, Division of Invertebrate Zoology, The American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.** Alternatively, application materials may be directed to **e-mail: microsys@amnh.org**. *Equal Opportunity Employer.*

SURGERY: RESEARCH SCIENTIST SURGERY/SENIOR FACULTY POSITION

The Department of Surgery at Brigham and Women's Hospital and Harvard Medical School invites applications for a tenure-track Research Scientist position at the level of **ASSOCIATE PROFESSOR** or **PROFESSOR**. The Department seeks candidates with expertise and track record of peer-review funding in cell and molecular biology in areas related to gastrointestinal, hepatobiliary, or pancreatic diseases. The position includes opportunities for leadership in the development of program projects within the institution and mentoring of young faculty in the Department. Candidates should send curriculum vitae, preprints/reprints of significant work, a statement of present and future goals in investigation, and arrange to have three letters of recommendation sent to: **Michael J. Zinner, M.D., Chairman, Department of Surgery, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115.** For other inquiries, **Telephone: 617-732-8181.** *Brigham and Women's Hospital and Harvard Medical School are Equal Opportunity/Affirmative Action Employers. Women and minorities are encouraged to apply.*

SENIOR SCIENTIST
Phenotyping

Educational requirements: Ph.D. or equivalent in life sciences. Experience requirements: two to five years of experience in a research or developmental environment. Creative individuals with an expertise in mouse behavior and knowledge of behavioral pharmacology. Familiarity with primary neuronal cultures is a plus. Advanced computer skills and practical knowledge of biostatistics are required. Job description/duties: Responsible for establishing and implementing behavior assays on genetically modified mice and integrative analysis of mutant phenotypes. Demonstrating success in technical proficiency, scientific creativity, individual thought, and excellent communication skills. FAX or mail curriculum vitae to:

Human Resources Department
Xenogen Biosciences
5 Cedar Brook Drive
Cranbury, NJ 08512
FAX: 609-235-1497
Website: http://www.xenogen.com

Equal Opportunity Employer.

POSITIONS OPEN

UNIVERSITY OF WASHINGTON SCHOOL OF MEDICINE

RESEARCH SCIENTIST
Seattle, Washington

The University of Washington School of Medicine and the VA Puget Sound Health Care System seek an individual to study the functions of leukemia and sarcoma fusion proteins. Candidates should have a Ph.D. and one to three years of experience in molecular biology. Knowledge of and skills in PCR, Western blotting, immunoprecipitation, and cell culture. Equivalent education/experience may substitute for stated requirements. Send résumé and cover letter to: **Howard Chansky, M.D., c/o Glo Campos, Department of Orthopaedics and Sports Medicine, Box 358280 University of Washington, Seattle, WA 98195.** Full job description: **website: http://www.washington.edu/admin/hr/uwjobs**; Research/Science/Laboratory category (Reference Number PL19094). *Equal Opportunity/Affirmative Action Employer.*

DIRECTOR
University of Wisconsin System Women and Science and University of Wisconsin Oshkosh Science Outreach Programs

University of Wisconsin Oshkosh invites applications/nominations for a Director of the UW System Women and Sciences (WS) and the UW Oshkosh Science Outreach (SO) programs. Continuing full-time, 10-month position. WS's (**website: http://www.uwosh.edu/wis/**) mission is to attract and retain women and minorities in science, math, and engineering by promoting systemic change in science education. A 2001 recipient of a Hesburgh Certificate of Excellence, WS works regionally/nationally to increase the number of faculty knowledgeable about gender and learning issues. SO provides continuing education for teachers and hands-on science experiences for K–12 students to improve science instruction. Required: Ph.D. in math, science, or engineering or Ph.D. in math or science education with demonstrated capability in mathematics or science research; teaching experience; expertise in gender, race, and ethnicity issues in science. Preferred: success in obtaining extramural grants; outreach and/or administrative experience. Responsibilities: Coordinate and develop both programs; communicate and interact with faculty, staff, and administrators throughout UW System and in school districts; seek external funding; represent programs locally and nationally. Starting: August 1, 2003, or as soon thereafter as possible. Deadline: January 3, 2003. Contact: **Dr. Fran Garb; e-mail: fgarb@uwsa.edu; Telephone: 608-263-9939.** Send application letter, curriculum vitae, three current letters of recommendation, transcripts to: **UWS Women and Science Program, UW Oshkosh, Oshkosh, WI 54901.** *Affirmative Action/Equal Opportunity Employer.*

CARDIOVASCULAR PHARMACOLOGIST: Procter & Gamble Pharmaceuticals is seeking Cardiovascular Scientists with strong leadership skills to lead multidisciplinary project teams in the discovery and characterization of novel antiarrhythmic drugs. Candidates must be able to establish clear project strategies, resolve and identify key project issues, and develop nonclinical procedures to screen and select lead compounds for transition to clinical development. Successful candidates must have a Ph.D. in pharmacology or a related field or a D.V.M. and must have at least four years of industrial experience in drug development. Prior supervisory experience of multiple direct reports, proven expertise in *in vitro* and *in vivo* cardiovascular physiology/pharmacology, prior experience in developing antiarrhythmic drugs, and the ability to work well in a team environment are required. Candidates must have strong interpersonal and communication skills to excel in the leadership and supervisory roles. To apply, please complete an online application form at **website: http://pg.com/jobs/jobs_ us/sectionmain.jhtml** and refer to Job RD 0000040. *P&G is an Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY POSITION
Computational Genomics
Department of Genetics
North Carolina State University

The Department of Genetics at North Carolina State University seeks applications at the **ASSISTANT PROFESSOR** level for a tenure-track faculty position in computational genomics. We seek an outstanding individual employing modern methods to explore fundamental problems in computational genomics including statistical analysis of genomic data and the development of population and quantitative genetic theory for understanding the structure and evolution of genomes. Applicants should have a Ph.D.; postdoctoral experience; teaching experience; and clear evidence of significant productivity, creativity, and independence. Successful candidates will be expected to develop vigorous, extramurally funded research programs; participate in the training of Ph.D. candidates; and contribute to graduate and undergraduate academic programs. Additional information is available at **website: http://www.cals.ncsu.edu/genetics/.**

Review of applications will begin January 2, 2003, and continue until the position is filled. Applicants should forward a hard copy of curriculum vitae, descriptions of teaching and research experience and interests, copies of key publications, and arrange for three letters of recommendation to be sent to:

Dr. Stephanie E. Curtis
Computational Genomics Search Committee
Department of Genetics, Box 7614
North Carolina State University
Raleigh, NC 27695-7614
E-mail: securtis@ncsu.edu

NCSU is an Equal Opportunity/Affirmative Action Employer. Americans With Disabilities Act accommodations: Jeffrey Hawley; e-mail: jeff_hawley@ncsu.edu; Telephone: 919-515-5727; FAX: 919-515-3355. In its commitment to diversity and Equity, NC State University seeks applications from women, minorities, and persons with disabilities.

The Research Institute on Addictions (RIA) anticipates an opening for a State of New York permanent **RESEARCH SCIENTIST** position. We are seeking an individual with neuroscience training in molecular/cellular neurobiology or biochemistry. A Doctoral degree and a minimum of one to two years of postdoctoral research experience are required. A track record of external grant funding is highly desirable but not necessary. The successful candidate is expected to obtain funding in research areas that answer important scientific questions relevant to substance abuse. Positions are subject to New York State Civil Service regulations. Salary and fringe benefits are competitive. RIA is a research center within the University at Buffalo, The State University of New York, and faculty and/or joint appointments with University of Buffalo departments are available. Visit the RIA **website: http://www.ria.buffalo.edu.** Inquiries can be made to: **Roh-Yu Shen, Search Committee Chair; e-mail: shen@ria.buffalo.edu.** Send cover letter outlining research experience and future plans, curriculum vitae, and letters of recommendation to: **James Krygier, Administrative Officer, Research Institute on Addictions, 1021 Main Street, Buffalo, NY 14203.** Applications will be reviewed beginning February 1, 2003. *The University at Buffalo is an Equal Opportunity Employer/Recruiter. Applications from minority candidates are particularly welcome.*

POSTDOCTORAL POSITION
Ligand-Gated Ion Channel Research

NIH-funded position to study the structure/function of the ligand-binding domain of the 5-HT3 receptor. A Ph.D. with skill in molecular biology, cell expression (overexpression), and receptor purification desirable. For further details, see **website: http://www.ttuhsc.edu/SOM/Pharmacology.** Send curriculum vitae and names of three references to: **Tina K. Machu/Michael P. Blanton, Department of Pharmacology, Texas Tech University HSC, 3601 Fourth Street, Lubbock, TX 79430. E-mail: tina.machu@tthuhsc.edu; FAX: 806-743-2744.**

Supervisory Microbiologist

USDA, Agricultural Research Service is seeking a Research Leader (Supervisory Microbiologist) to lead a research unit and conduct personal research on foreign animal diseases, at the Plum Island Animal Disease Center, Orient, NY. The research unit conducts fundamental and applied research on Foot-and-Mouth Disease, Vesicular Stomatitis and other viruses as assigned, for the purpose of developing practical methods of detection and control of these important livestock diseases. As Research Leader, you will be responsible for unit fiscal and human resources. You will also lead a team in conducting research on vesicular diseases. Candidates must be knowledgeable in virology, molecular biology, immunology, pathogenesis of viral diseases, protein and nucleic acid biochemistry, recombinant DNA technology, monoclonal antibody technology, vaccine development and diagnostic test evaluations. A DVM/Ph.D. (Or equivalent) or Ph.D. degree is desired, with at least 5 years of post-graduate degree experience and demonstrated accomplishments in at least one area of the disciplines listed above. Candidates must be U.S. citizens. Salary is commensurate with experience, $80,897 - $105,165, plus benefits.

For information on the research program/position contact **Mrs. Wilda Martinez, (215) 233-6593**. For application information/instructions, please contact **Maria Martocchia, (631) 323-3346**. Applications must be received by **January 6, 2003**.

ARS IS AN EQUAL OPPORTUNITY EMPLOYER.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL HUMAN GENOME RESEARCH INSTITUTE

Program Director, Genetic Variation Research

The National Human Genome Research Institute (NHGRI) seeks candidates for a Program Director position to help manage a rapidly expanding research grants portfolio in genetic variation. The genetic variation effort at NHGRI supports the International HapMap Consortium and related projects, other studies of genetic variation in humans and model organisms, the development of new technologies for genotyping, resequencing, and analysis of genetic variation, haplotype, linkage, and association data. See **http://www.genome.gov/page.cfm?pageID=10001551**.

Responsibilities will include developing new program initiatives, administering a portfolio of research awards, and interacting with researchers and related programs at NHGRI, NIH and other agencies (both public and private in the U.S. and abroad). Candidates must have a Ph.D., M.D. or equivalent-level degree, and should have considerable research experience in genetic variation, association studies, genotyping, and/or population genetics, plus broad knowledge of biology, particularly genetics and genomics. Preference will be given to candidates with experience in research management. The ability to work both independently and collaboratively, as needed, is essential, as are strong communication, writing, and organizational skills. The position may be filled on a permanent or rotating basis. Salary will be commensurate with experience. Send CV, Bibliography and the names of 4 references by email: **nhgrijobs-r@mail.nih.gov** or FAX: **(301)480-2770** by **January 15, 2003**.

With nationwide responsibility for improving the health and well being of all Americans, the Department of Health and Human Services oversees the biomedical research programs of the National Institutes of Health. **http://www.os.dhhs.gov/**.

HHS and NIH are Equal Opportunity Employers

COURSE

The **Agouron Institute** and the **USC Wrigley Institute** present the

SUMMER COURSE IN GEOBIOLOGY

June 12-July 25, 2003
Catalina Island, California

An intensive course for graduate or postdoctoral students on the interaction between microbiology and the environment and how these interactions have shaped the evolution of the earth.

Three themes are emphasized this year:

1. Biofilms and mineral precipitation
2. Early earth chemistry and the evolution of metabolism
3. Biogeochemical systems

More than a dozen leading faculty co-teach the class, including: A. Knoll, J. Grotzinger, S. Benner, K. Nealson, D. Newman, D. Karl, K. Hanselmann and W. Berelson. Participants gain experience in lab, analytical and field methods. The course includes a field trip to Yellowstone National Park, a short research cruise and three public mini-symposia.

Application deadline: Feb 15, 2003

Contact: Geobiology Course Committee
c/o Ann Close (close@usc.edu)

http://wrigley.usc.edu

TRAINING

DO YOU WANT TO BE A LEADER IN HEALTH RESEARCH?

The Canadian Institutes of Health Research's (CIHR) innovative Strategic Training Initiative in Health Research offers you the opportunity to receive cutting-edge research training in 51 areas of health research.

Training Program in Regenerative Medicine

The field of regenerative medicine, defined as the practice of repair, regeneration, or replacement of tissues and organs that have failed, has enormous potential to revolutionize diagnostic and therapeutic approaches via the development of radical new therapies. This broad field encompasses numerous innovative areas including stem cell gene therapy.

Individuals will have an opportunity to be trained by some of Canada's top researchers at leading institutions in the following areas: immunology of tolerance, molecular biology, stem cell biology, gene therapy, ethics and clinical trials.

McMaster University

For more information and/or to send your application, please contact Dawn Walsh, Program Coordinator at dawn.walsh@uhn.on.ca or call 416-340-4800, x6315.

Submission Deadline: January 30, 2003

CIHR IRSC
Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

Canada

POSITIONS OPEN

POSTDOCTORAL FELLOW MOLECULAR BIOLOGY/BIOCHEMISTRY Auburn University, Alabama

Two positions are available immediately to develop bioselective phage-displayed ligands for biosensor detection of microbial threat agents in a collaborative project funded by DARPA and ARO. Appropriate skills and interests include molecular biology of bacteriophages, vector design, construction of phage display libraries, site-directed mutagenesis, biopanning, ELISA, DNA sequencing and general genetic engineering methods. Ph.D. in molecular biology or biochemistry is required. *The candidate selected for this position must be able to meet eligibility requirements for work in the United States.*

Applicants should submit curriculum vitae and names of three references to: **Professor Valery Petrenko, Department of Pathobiology, 264 Greene Hall, College of Veterinary Medicine, Auburn University, Auburn, AL 36849-5519. E- mail: petreva@vetmed.auburn.edu; FAX: 334-844-2652.** Review of applications will begin December 15, 2002, and continue until a candidate is recommended for appointment.

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

POSTDOCTORAL POSITION Studies of Cultured Neural Networks California Institute of Technology

The position is for working on the development of a neurochip system for studying the development and plasticity of cultured networks of 25-50 neurons. We are collaborating with a Caltech microdevice laboratory, which is producing chips that enclose individual neurons in "wells" that allow outgrowth and that incorporate extracellular electrodes for stimulation and recording. The system will allow for long-term studies of how the connectivity and stimulus-response behavior of a moderately complex neural system develops and is modified by stimuli. The initial development work will include construction of an optical tweezers system and an electrophysiology data acquisition system. If you are interested, please contact: **Professor Jerry Pine; e-mail: jpmail@capsi.caltech.edu.** Include curriculum vitae.

RESEARCH LABORATORY DIRECTOR POSITION is currently available in the Division of Neurosurgery at Beth Israel Deaconess Medical Center. The position entails studying and managing projects concerning brain tumor biology, genetics and metastasis, and directing the brain cancer tumor bank. A Ph.D. and/or M.D. degree is required with experience in cell culture, molecular, and cell biology techniques. The candidate should have a minimum of three years of postdoctoral experience with a solid publication record and excellent written, verbal, and organizational skills. Priority will be given to more senior individuals with an established research program including research grants. A faculty appointment at Harvard Medical School is included. Send résumé to: **Julian K. Wu, M.D., Chief, Division of Neurosurgery, Beth Israel Deaconess Medical Center, Lowry Medical Building, Suite 3B, 110 Francis Street, Boston, MA 02215. E-mail: jwu3@caregroup.harvard.edu.**

POSTDOCTORAL POSITION is available at Fox Chase Cancer Center (**website: http://www.fccc.edu**) to study the genetic and cellular basis of tuberous sclerosis complex (*PNAS* 97:6085, 2000). We are looking for a highly motivated M.D. or Ph.D. with a strong background in genetics and/or cell biology to join a dynamic, highly interactive laboratory. Send curriculum vitae and the names of three references to: **Dr. Elizabeth Henske, c/o Human Resources, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111. E-mail: ep_henske@fccc.edu.** *Equal Opportunity Employer.*

POSITIONS OPEN

Pennington Biomedical Research Center, a Louisiana State University facility, is accepting applications for **RESEARCH ASSOCIATE** and **POSTDOCTORAL RESEARCHER** positions. For information on employment options, see our **website: http://www.pbrc.edu.**

Pennington Biomedical Research Center is an Equal Opportunity Employer.

POSTDOCTORAL FELLOW in population biology. The Center for Population Biology at University of California, Davis, invites applications for a Postdoctoral Fellowship in population biology, broadly defined to include ecology, systematics, population genetics, and evolution. The position is for two years, subject to review for one year, and can begin as early as 1 June 2003. It has an annual salary of $31,000 and $4,000 per annum in research support. The Fellow will be a fully participating member in the Center for Population Biology (CPB) and will be expected to have an independent research program that bridges the interests of two or more CPB laboratory groups. For more information about UCD programs in population biology, see our **website: http://www.cpb.ucdavis.edu.** Interested candidates should submit curriculum vitae, three letters of reference, a short (one- to-two-page) description of research accomplishments, and a short (one- to-two-page) description of proposed research indicating potential faculty members to: **CPB Fellow Search Committee, Center for Population Biology, University of California, One Shields Avenue, Davis, CA 95616-8755.** Application evaluation will begin on January 2, 2003. *The University of California is an Affirmative Action/Equal Opportunity Employer with a strong institutional commitment to the development of a climate that supports Equality of Opportunity and respect for differences.*

CAREER IN OPTOMETRY, OPTOMETRIC RESEARCH, OR TEACHING

The New England College of Optometry offers a unique program for those with a Doctorate in the sciences: biology, chemistry, physics, psychology, etc. Candidates have the opportunity to obtain the Doctor of Optometry (O.D.) degree in 27 months. The Program begins annually in March. Employment opportunities exist in clinical practice, industry, optometric faculty positions, and research. Contact: **Admissions Office, Department S, 424 Beacon Street, Boston, MA 02115. Telephone: 1-800-824-5526; e-mail: admissio@ne-optometry.edu; website: http://www.ne-optometry.edu.** Application deadline: February 1, 2003.

POSTDOCTORAL POSITION available (Massachusetts General Hospital, Harvard Medical School) to examine transcriptional mechanisms governing intestinal epithelial differentiation. The research will focus on specific transcription factors as well as the role that histone proteins (chromatin) play in regard to gut differentiation in both normal and diseased conditions. Molecular biology experience is required. Please send curriculum vitae and two references to: **Richard Hodin, M.D., Department of Surgery and Gastrointestinal Unit, Massachusetts General Hospital, GRB 504, 55 Fruit Street, Boston, MA 02114. E-mail: rhodin@partners.org.**

The Massachusetts General Hospital is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL ASSOCIATE Molecular/Cellular Biology

Fox Chase Cancer Center, an NCI-designated Comprehensive Cancer Center situated in a park-like suburban setting, has a position available immediately for studies of Rac and P13K/Akt signaling relevant to tumor cell survival and motility. Submit curriculum vitae and names of three references to: **Joseph R. Testa, Ph.D., Fox Chase Cancer Center, c/o Human Resources, 7701 Burholme Avenue, Philadelphia, PA 19111.** *Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITIONS Microbial Ecology and Community Genomics Oak Ridge National Laboratory

Postdoctoral positions are available in the Environmental Sciences Division (**website: http://www.esd.gov**), Oak Ridge National Laboratory (ORNL) (**website: http://www.ornl.gov**), for individuals with training in molecular biology, genetics, biochemistry, and microbiology. Opportunities exist for successful applicants to participate in a wide range of microbial ecology and genomics projects focusing on developing and using microarray-based genomic technologies for analyzing microbial communities related to bioremediation, global changes, and carbon and nitrogen dynamics in both terrestrial and marine environments. The candidates will also have opportunities to work on functional analysis *Shewanella oneidensis* MR−1, *Nitrosomonas europea, Deinococcus radiodurans, Rhodopseudomonas palustris, Desulfovibrio vulgaris,* and *Geobacter metallireducens* using both microarray-based genomic and/or phage display-based proteomic approaches.

Candidates must have a Ph.D. with demonstrated experience in molecular techniques such as gene cloning, gene expression, microbial ecology, or environmental engineering. Additional experience is desired but not required in bioinformatics, physiology, and microarray technology. Individuals will work cooperatively with Scientists at ORNL, Michigan State University, Stanford University, Pacific Northwest National Laboratory, Lawrence Berkeley National Laboratory, and/or Argonne National Laboratory.

Interested candidates should send curriculum vitae, a description of research accomplishments and interests, and the names and telephone numbers of three references to: **Dr. Jizhong Zhou, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6038. Telephone: 423-576-7544; FAX: 423-576-8646; e-mail: zhouj@ornl.gov; website: http://www.esd.ornl.gov/facilities/genomics/index.html.** Please reference the position title and number (ORNL03-03-ESD) when corresponding about this position.

This appointment will be offered through the ORNL Postdoctoral Research Associates Program (**website: http://www.orau.gov/orise/edu/ornl/ornl-pd/ornlpdoc.htm**). Salaries will be competitive. *The program is open to all qualified U.S. and non-U.S. citizens without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.*

JOHNS HOPKINS UNIVERSITY School of Medicine

Two **POSTDOCTORAL RESEARCH FELLOWSHIPS** are immediately available to study the regulation of FLT3 expression and its role in normal hematopoiesis. Successful candidates are those highly motivated individuals with a good background in cellular and molecular biology. Please respond by e-mail or FAX with curriculum vitae and three references to:

Donald Small, M.D., Ph.D.
CRB Room 251
1650 Orleans Street
Baltimore, MD 21231-1000
Telephone: 410-614-0994
FAX: 410-955-8897
E-mail: donsmall@jhmi.edu

Johns Hopkins is an Equal Opportunity Employer.

POSTDOCTORAL POSITION available immediately to conduct research investigating the transcriptional control mechanism regulating acute lung injury. Applicants must have a Ph.D. and/or M.D. and significant experience with small animal models and molecular biology is preferred. Please e-mail or send a cover letter including a statement of research and career goals, complete curriculum vitae, and contact information for three references to: **Dr. Alex B. Lentsch, Department of Surgery, University of Cincinnati College of Medicine, 231 Albert Sabin Way, Cincinnati, OH 45267-0558. E-mail: alex.lentsch@uc.mail.** *The University of Cincinnati is an Affirmative Action/Equal Opportunity Employer. Women and minorities are particularly encouraged to apply.*

COURSE

2003 Courses in Cell Biology

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June 15 - July 27, 2003

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May 18 - June 28, 2003

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August 5 - August 23, 2003

For more information, contact:
Carol Hamel, Admissions Coordinator
(508) 289-7401; admissions@mbl.edu

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GRANTS

SBS Endowment Fund
Grants Program

The **Society for Biomolecular Screening** has established an endowment for a small grants program. These grants will provide start-up funding for research projects with potential to advance the disciplines, technologies and skills involved in these areas. The program is intended to support projects that may have an applied focus or those that may involve radically new concepts. This year, there are a total of three grants available: two for research projects and one for an education program.

Eligibility: Applicants must be employed full time in a college, university or not-for-profit research institute in order to serve as principal investigators (PI). Applications are considered without regard to race, religion, national origin, physical handicap or age of the candidates.

Deadlines: Applications must be received by February 14, 2003. Reviews will be conducted from March through May and notifications of awards will be done by June. Awards will be made to the applicant's institution and funds will be transferred on or about June 15.

Further information for submitting applications is available on the SBS website at www.sbsonline.org.

The Society for Biomolecular Screening's mission is to further the science and application of Molecular Discovery by supporting basic research and training in academic institutions.

The Society for Biomolecular Screening | 36 Tamarack Ave., #348 | Danbury, CT 06811 | USA
Tel: +1 203 743 1336 | Fax: +1 203 748 7557 | E-mail: email@sbsonline.org

POSITIONS OPEN

CORIELL INSTITUTE for Medical Research

POSTDOCTORAL FELLOW to study adult tissue-derived stem cells. The primary emphasis will be on the characterization and *in vitro* differentiation of stem cells from the pancreas to -cells. However, we are also interested in developing novel culture conditions to enhance the survival of islets isolated for transplantation. The laboratory has developed novel porcine pancreatic cell lines and a serum-free medium that supports the growth of porcine pancreatic epithelial cells and has a preliminary system for their differentiation into insulin-producing cells in culture. Shared facilities available include a fluorescence-activated cell sorter, immunofluorescence microscopes with digital image capture capabilities, and a DNA microarray scanner. Experience in tissue culture and molecular biology required; experience in physiology and small animal handling desirable. Submit letter, curriculum vitae, and three letters of reference to: **C. Tule, Coriell Institute for Medical Research, 403 Haddon Avenue, Camden, NJ 08103. FAX: 856-757-4830; e-mail: ctule@cimr.umdnj.edu**. *Affirmative Action/Equal Opportunity Employer.*

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW position available immediately within the Massey Cancer Center for NIH-supported studies investigating molecular determinants of apoptosis in malignant hematopoietic cells. Candidates should have an M.D. and/or Ph.D. degree. Familiarity with modern molecular biology techniques including genetic engineering, transient transfections, gel shift assays, and a background in cell biology including assessment of apoptosis essential. Prior experience in the fields of signal transduction and cell cycle regulation highly desirable. Salary commensurate with experience. Send résumé and the names of three references to: **Dr. Steven Grant, Department of Internal Medicine, Division of Hematology/Oncology, Virginia Commonwealth University/Medical College of Virginia, P.O. Box 980230, Richmond, VA 23298-0230. E-mail: stgrant@hsc.vcu.edu**. Position will close February 15, 2003.

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

POSTDOCTORAL FELLOWSHIPS POSITION

Postdoctoral positions available to study molecular regulation of protease gene expression in cancer (**website: http://www.mdanderson.org/DouglasBoyd**) with emphasis on *in vivo* gene transcription using transgenic mice, genomic footprinting, chip, real time PCR. Candidates must have a first-author manuscript submitted or accepted in a peer-reviewed journal of international recognition. Applicants should submit curriculum vitae by **e-mail: dboyd@mdanderson.org**. *M.D. Anderson Cancer Center is Equal Employment Opportunity compliant and is a smoke-free environment.*

POSTDOCTORAL POSITION available to study genes involved in telomere maintenance and the consequences of telomere loss and repair for chromosome instability in mammalian cells and tumor formation in mice. Applicants should have a strong background in molecular biology. Send curriculum vitae to: **Dr. John Murnane, Department of Radiation Oncology, University of California, San Francisco, 1855 Folsom Street, MCB200, San Francisco, CA 94103. E-mail: murnane@rorl.ucsf.edu**. *UCSF is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION
Neuroscience

Project involves neuroactive agent-induced changes in arousal and sensory gating. Contact: **Dr. Roger Buchanan; e-mail: rbuck@astate.edu**.

Arkansas State University is an Equal Opportunity/Affirmative Action Employer with a strong institutional commitment to achievement of excellence and diversity among its staff.

POSITIONS OPEN

POSTDOCTORAL FELLOWS
DEPARTMENT OF BIOCHEMISTRY
Cellular and Molecular Signaling
Medical College of Virginia
Virginia Commonwealth University

Positions available for a well-funded program to study the role of the new bioactive lipid mediator, sphingosine-1-phosphate, in regulation of angiogenesis, cell growth, apoptosis, and allergic responses. We invite highly motivated candidates with background and experience in molecular and cell biology to join our team. For information, see *Science* **291:1800–1803, 2001**; visit our **website: http://views.vcu.edu/biochem/**. Please send curriculum vitae with names of three references to:

Dr. Sarah Spiegel
Professor and Chair
Department of Biochemistry
Virginia Commonwealth University
1101 East Marshall Street
Sanger Hall, Room 2-011, P.O. Box 980614
Richmond, VA 23298-0614
E-mail: c/o Dr. Sheldon Milstien;
e-mail: milstien@codon.nih.gov

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

POSTDOCTORAL POSITIONS
Malaria Mosquito Genomics

Two positions available January 2003 or after to study mosquito innate immunity and mechanisms of mosquito resistance to malaria. Experience should include any of the following: functional genomics, proteomics, bioinformatics, genetics, and molecular and cell biology. Previous mosquito/malaria research background helpful but are not required. Examples of recent work are in *Science* **298:213–226**; *PNAS* **97: 11397–11402**; *Science* **298: 159–165**. Laboratory will be in new genomics center at University of Minnesota–Minneapolis with mosquito insectary and all genomic and proteomic instrumentation. Work can also include field research at collaborating center in West Africa. Salary commensurate with experience. Please send curriculum vitae with names and contact information of three references and cover letter of research interests to: **Dr. Kenneth Vernick, Department of Medical and Molecular Parasitology, New York University School of Medicine, 341 East 25th Street, New York, NY 10010. E-mail: kenneth.vernick@nyu.edu**.

POSTDOCTORAL POSITION

Available in early 2003 to identify and characterize glycosaminoglycans that regulate a serine protease cascade specifying ventral (mesoderm) development in the *Drosophila* embryo. Candidates must have a Ph.D. and be highly motivated; extensive prior experience in biochemistry of the extracellular matrix, developmental biology, or molecular biology is desirable. Send curriculum vitae, description of research interests, and names/contact information for three references to: **Ellen K. LeMosy, M.D., Ph.D., Department of Cellular Biology and Anatomy, Medical College of Georgia, 1459 Laney Walker Boulevard, CB2915, Augusta, GA 30912-2000. FAX: 706-721-6120; e-mail: elemosy@mail.mcg.edu**.

POSTDOCTORAL POSITIONS
Membrane Proteins

These positions are available immediately to carry out research on molecular and cellular biology of transport proteins. (1) NaK-ATPase, reaction mechanism, assembly and trafficking. (2) CTR, structure function analysis, and cell biology of the human copper transporter. Experience in protein chemistry, heterologous expression, using biochemistry and cell biology preferred. An interactive department in a beautiful location. Send curriculum vitae and names of references to: **Jack H. Kaplan, Ph.D., F.R.S., Professor and Chair, L224, Oregon Health Sciences University, 3181 S.W. Sam Jackson Park Road, Portland, OR 97201. E-mail: kaplanj@ohsu.edu**.

POSITIONS OPEN

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RESEARCH FELLOWSHIP
Kidney Microvascular Physiology
Tulane University Health Sciences Center
New Orleans, Louisiana, U.S.A.

A **POSTDOCTORAL RESEARCH** position is available in the laboratory of **L.M. Harrison-Bernard, Ph.D., Assistant Professor of Physiology** at Tulane Medical School, to directly study the function of the renal microvasculature. Current projects funded by the NIH-NIDDK place special emphasis on discerning the distinct functions of the angiotensin receptors in the kidney vasculature. The Fellow will be engaged in highly sophisticated videomicroscopic analysis of the renal microcirculation of the mouse. Microsurgical and microdissection skills are preferred. Salary range is $25,000 to $30,000 depending on level of experience. Interested applicants should have an M.D., Ph.D., or both and should send current curriculum vitae; a statement of research interests and career goals; and names and addresses of three references to: **L. M. Harrison-Bernard, Ph.D., Tulane University School of Medicine, Department of Physiology SL39, 1430 Tulane Avenue, New Orleans, LA 70112-2699 U.S.A. E-mail: lharris@tulane.edu**. *Tulane University is an Affirmative Action/Equal Opportunity Employer and qualified women and minorities are encouraged to apply.*

POSTDOCTORAL POSITIONS
Male Germ Line Stem Cell Research
Georgetown University Medical Center

Two Postdoctoral Research positions available immediately to investigate the molecular biology of male germ line stem cells. Candidates should have a Ph.D. degree with a strong foundation in molecular and cell biology. Salary is commensurate with qualifications. Send description of research experience and interests, curriculum vitae, and reference information to: **Dr. Martin Dym, Chair, Department of Cell Biology, Georgetown University Medical Center, Washington, DC 20057. E-mail: dymm@georgetown.edu**. *Georgetown University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS are available to study the action of bacterial effector proteins in *Arabidopsis*. Effectors secreted by the bacteria act inside cells of the plant to enhance growth of the pathogen. Plants expressing an appropriate resistance protein sense an effector and induce an immune response. Current research focuses on the molecular mechanisms of each of these processes. Experience in molecular biology, biochemistry, or genetics is needed. Send curriculum vitae including names and e-mail addresses for three references to: **Dr. David Mackey, Ohio State University, 306C Kottman Hall, 2021 Coffey Road, Columbus, OH 43210. FAX: 614-292-7162; Telephone: 614-292-5879; e-mail: mackey.86@osu.edu**.

POSTDOCTORAL POSITION available to use molecular genetic approaches to study DNA repair, genomic stability, and genetic recombination in mammalian cells. Experience in molecular biology required. Mammalian cell culture experience preferred. Send curriculum vitae with bibliography, description of research experience, and names and addresses of three references to: **Dr. Alan S. Waldman, Department of Biological Sciences, Coker Life Sciences Building, University of South Carolina, Columbia, SC 29208. E-mail: awaldman@sc.edu**.

POSITIONS OPEN

Two **RESEARCH ASSISTANT** or **RESEARCH ASSOCIATE** positions are available immediately to study lung growth, lung ischemia-reperfusion injury, and/or spinal cord injury. Surgical, cellular, molecular, and biomedical imaging techniques will be utilized in both large and small animal models. Master's degree or equivalent; Ph.D. and/or M.D. required with experience in surgery and/or animal research. The candidate will work with faculty in both medical and basic research. Our laboratory is productive, the research environment stimulating, and interaction with other laboratories is encouraged. Visit **website: http://www.ctsnet.org/doc/4991**. Send curriculum vitae and a description of research interests to: **Sharon Jordan, University of Virginia Health System, Department of Surgery, P.O. Box 800709, Charlottesville, VA 22908. E-mail: ssj@virginia.edu**. *An Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS
Applied Conservation

The Nature Conservancy (TNC) announces the sixth round of David H. Smith Conservation Research Fellowships, which provide two-year postdoctoral support in applied conservation biology. Each Fellow will carry out research pertinent to conservation issues in the United States at an institution selected by the Fellow in close association with a TNC mentor. Research will have relevance to sites or ecoregions that TNC has identified as having conservation priority. Research themes are open; past Fellowships have focused on conservation planning, climate change, avian conservation, freshwater and riparian ecology, and invasive species. Proposals are due January 31, 2003. Funding for Fellows will be available August 2003. For more information including the proposal guidelines and selection criteria, see the Smith Program **website: http://www.smithfellows.org**. You can also request a copy of the guidelines by sending an e-mail or writing to: **Smith Conservation Research Fellowship Program, The Nature Conservancy, 4245 North Fairfax Drive, Suite 100, Arlington, VA 22203-1606. E-mail: postdoc@tnc.org**. *The Nature Conservancy is an Equal Opportunity Employer.*

AWARDS

NEW INVESTIGATOR AWARDS
MAREN FOUNDATION AWARDS
Summer Research at Mount Desert Island Biological Laboratory

The Mount Desert Island Biological Laboratory (MDIBL; located in Salisbury Cove, Maine) is a 105-year-old research institution and an international center for comparative physiology, toxicology, and marine functional genomics studies. New Investigator awards are available for Scientists at all stages of their careers who wish to use marine systems for research studies at MDIBL during summer 2003. Awards can be used to defray the cost of laboratory space, housing, equipment fees, and other costs depending on individual needs. Average awards are between $4,000 and $12,000. Special awards from the Salisbury Cove Research Fund (Thomas H. Maren Foundation) are available for up to $20,000 depending on need and potential long-term commitment to the Laboratory. See **website: http://www.mdibl.org** for applications and additional information.

WORKSHOPS

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LBNL/NHLBI
February 24–28, 2003

Designed for Postdoctoral, medical, and especially Cardiovascular Researchers interested in applying bioinformatics tools to their research. Techniques include database searches, annotation, microarray analysis, and more. For further information, **Telephone: 510-496-4162; e-mail: pgaworkshop@lbl.gov**. Apply by January 12, 2003, at **website: http://pga.lbl.gov/workshop**.

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RNase H minus (RNase H⁻) reverse transcriptases (RTs) are a popular choice among researchers for reverse transcription applications. While RNase H⁻ RTs are appropriate for a variety of applications, they can actually limit the sensitivity of qRT-PCR detection (see Figure 1). Presumably, undegraded RNA template left over after the first strand cDNA synthesis step can bind to the newly synthesized cDNA and restrict its accessibility to primers during the PCR amplification. RNase H mediated degradation of the RNA template can prevent this problem and improve the sensitivity of qRT-PCR analysis.

The MessageSensor RT Kit can afford a reduction in C_t values of up to 3 to 4 cycles especially with low amounts of input RNA (see Figure 1), compared to other commercially available RNase H⁻ reverse transcriptases.

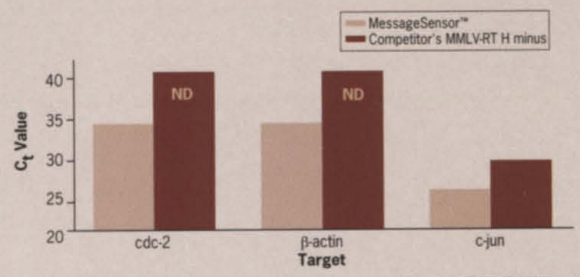

Figure 1. One-Step RT-PCR With MessageSensor™ System and a Popular MMLV RT RNase H Minus System. C_t values associated with cdc-2 and β-actin targets were detected from 10 pg HeLa S3 total RNA, whereas c-jun was detected from 100 ng HeLa S3 total RNA. Note: A lower C_t value indicates a more sensitive detection system. PCR was performed for 40 cycles and no product detected in either the cdc-2 or β-actin samples generated with the competitor's RNase H⁻ RT. Samples that failed to generate a signal were charted at 40 C_t's for convenience. ND = "Not Detected".

Linear Detection over a Million-fold Range of Input RNA

The MessageSensor RT Kit can accurately report target abundance over a million-fold range of input RNA. As little as 500 fg (approximately 1/20th of a single cell) of total RNA can be used for the MessageSensor RT reaction (see Figure 2). Unlike other kits that require the use of different enzymes for low and high amounts of input RNA, MessageSensor provides a single solution for all your qRT-PCR applications.

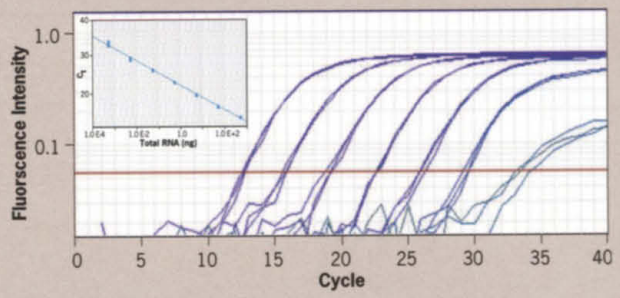

Figure 2. Linear Quantitation Over a One Million-fold Range of Input RNA with MessageSensor™. One-step RT-PCR was performed with a triplicate standard curve from 500 fg to 0.5 µg HeLa S3 RNA. The target was Human GAPDH, detected using a TaqMan® probe. The amplification plot show data in triplicate and the standard curve (inset) yielded an r^2 value of 0.998. All RT minus controls and RNA minus controls were negative.

A Complete RT Kit for qRT-PCR Applications

The MessageSensor RT Kit comes with sufficient reagents to perform 50 reactions as well as a buffer additive that enables detection with SYBR Green. When purchased in conjunction Ambion's SuperTaq™ Real-Time and MessageSensor provide all the reagents necessary to perform one-step qRT-PCR (except for gene-specific primers and fluorogenic probe or dye).

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The Discovery Moment

January 28, 4:31 PM
Susan Kellerman, Ph.D.

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